



ABBOTSFORD FIRE RESCUE SERVICE MASTER PLAN





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EXECUTIVE SUMMARY

This document presents the 2018 *Master Plan* for the Abbotsford Fire Rescue Service (AFRS), the City of Abbotsford's fire department. The *Master Plan* was developed under the City's "Plan for 200K" initiative to:

- define the ongoing role of AFRS in helping to protect the health and safety of the community
- outline the department's future service model, which emphasizes the dual importance of incident prevention and incident response
- guide, using a set of recommended actions, the department's use of resources in the coming years

The *Master Plan* profiles Abbotsford, the community that AFRS exists to serve. Anticipated growth and development patterns, set out in the *Abbotsford Forward* document, are examined. The Plan also reviews the department itself, including its purpose, authority, staffing and structure, range of services, budget and assets, as well as its various innovations introduced in recent years. Challenges facing the department are identified.

A set of principles, used to guide the master planning process and shape the future direction of the department, are presented in the Plan. These guiding principles emphasize the importance of:

- City Council's priorities, expressed as the four cornerstones of Vibrant Economy, Complete Community, Fiscal Discipline, and Organizational Alignment
- the health and safety of AFRS' firefighters, the community, and the natural environment
- the department's "first line of defence" — i.e., efforts that are taken to prevent fires and other incidents from occurring
- a robust and efficient "second line of defence" — i.e., steps taken by the department to respond to incidents that do occur
- the department's commitment to a composite service model with a strong career core, supported by an effective POC contingent
- future development as a trigger for growth in the department's service capacity

Sections 5 through 9 of the *Master Plan* present a series of recommended actions that, taken together, outline a new service model — indeed, a new way of doing business — for the department. The new model:

- emphasizes the strong need for incident prevention in addition to incident response
- speaks to the importance of, but also challenges related to, retaining a strong POC contingent
- sets out targeted increases to the number of career staff as necessary to support efforts aimed at incident prevention, on-shift training, the protection of firefighter health and safety, and other goals

The actions are summarized in Figure ES.1.

FIGURE ES.1

SUMMARY OF RECOMMENDED ACTIONS

SECTION	RECOMMENDED ACTIONS
<p>Section 5: Prevention of Incidents</p>	<p>Community Safety Education</p> <ul style="list-style-type: none"> • AFRS will hire a full-time Emergency and Safety Program Coordinator (ESPC) who will report to the Fire Chief • The ESPC will be responsible for developing a Community Safety Education Strategy, which will include programs that are targeted at specific incidents, populations, neighbourhoods in the City, and behaviours <ul style="list-style-type: none"> » A key program developed for the Strategy will be a Home Safety Visits program • The ESPC will oversee the implementation of the Strategy, and the delivery of its programs <ul style="list-style-type: none"> » Career crews will participate in program delivery, along with active POCs, AFRS career and POC alumni and, where possible, public health professionals • The ESPC, in collaboration with the Assistant Chief (Prevention) will establish KPIs to measure the activity under, and impact of, the programs in the Strategy <p>Compliance Monitoring</p> <ul style="list-style-type: none"> • Using the authority in the Fire Safety Act, AFRS will develop and recommend to Council a new risk-based compliance monitoring system to focus the department's fire safety inspection efforts on high-risk, low-compliance buildings • AFRS will implement handheld tablets for all fire safety inspections • AFRS will monitor the issue of unsightly and hazardous vacant residential buildings, and work with other City departments as necessary to develop appropriate regulations and fees <p>Residential Fire Sprinklers</p> <ul style="list-style-type: none"> • AFRS will consult developers, homebuilders and the community as a whole in designing and building support for a City of Abbotsford initiative to require the installation of residential fire sprinklers in all new residential occupancies, including single-and-two-family homes

SECTION

RECOMMENDED ACTIONS

Section 6: Paid-on-Call Firefighters

Recruitment and Retention

- AFRS will work with other City departments, as well as active POCs and POC alumni, to develop a POC Recruitment and Retention Strategy
 - » AFRS will explore opportunities to collaborate with other, nearby composite fire departments in developing the Strategy, and will seek guidance and materials from fire service associations that have developed best practices
- AFRS will explore the potential of establishing a new class of auxiliary members assigned to prevention
- AFRS will examine the feasibility of requiring POCs who leave before a certain period of service for a career position in another department to reimburse the City for a portion of training and certification costs incurred

Scheduled Back-Up

- With the concurrence of IAFF Local 2864, and under terms set out in a Letter of Understanding, AFRS will schedule POC members, for six-month renewable terms, to provide back-up response from 1400 hours to 1800 hours, Wednesday through Saturday each week

Section 7: Incident Response

Incident Types

- AFRS will give notice to industry groups and others of its intent to terminate its confined space rescue service
- AFRS will develop a specialized water rescue service, and will retain its technical high angle rescue and specialized Hazmat response services
- AFRS will pursue equitable cost-sharing agreements with neighbouring jurisdictions for the provision of specialized Hazmat response, technical high angle rescue, and water rescue services

Unwanted Alarms

- AFRS will develop a new response protocol for unwanted alarms for non-residential alarm calls
 - » The protocol will be based on a risk-assessment, implemented in phases, and informed by the results of consultation with non-residential property owners and the department's dispatch provider (EComm 911)

Two-Person Rescue Trucks

- AFRS will introduce a full-time, 24/7 two-person crew and rescue vehicle to each of Halls 1 and 6 to assist in responding to medical and other incidents that do not require four-person engine response
- AFRS will build the new two-person crews using existing staff, where possible, and by hiring new firefighters as necessary

SECTION

RECOMMENDED ACTIONS

Section 7: Incident Response

Station Locations

- AFRS will provide full-time career staff in a new fire hall (Hall 9) or a re-located existing hall (Hall 7) to serve the Auguston, Vicarro Ranch, and Mckee Peak beginning in 2023 or later, depending on the pace of development in the area
 - » AFRS will provide, initially, a two-person full-time crew, supported by POCs and career crews from other halls
- AFRS will re-locate Hall 6 to assist the department in achieving its urban response-time target within the eastern section of the Urban Core
- AFRS will pursue automatic aid with the Township of Langley to serve portions of West Abbotsford

Section 8: Firefighter Health and Safety

Physical Health and Safety

- AFRS will develop and/or update Operational Guidelines, as required, to protect the physical health and safety of its members
- AFRS will continue to conduct annual medical exams of its firefighters
- AFRS will review recommendations and best practices from NFPA, Washington State and other agencies, aimed at reducing the exposure of firefighters to carcinogens

Mental Health and Safety

- AFRS will establish a Mental Health and Safety Steering Committee, headed by an Assistant Chief, to oversee the implementation of all existing mental health and safety programs, and to review the need for and recommend, where necessary, the development of new programs

Section 9: Emergency Program

- AFRS will dedicate a portion of the Emergency and Safety Program Coordinator position to the City of Abbotsford Emergency Program
- AFRS will explore the development of a stand-alone Emergency Operations Centre with the replacement of Hall 6
- AFRS will seek opportunities for table-top exercises, and opportunities to activate the EOC, so that all departments can gain valuable experience in Program implementation



SECTION 1 INTRODUCTION

This document presents the 2018 *Master Plan* for the Abbotsford Fire Rescue Service (AFRS), the City of Abbotsford’s fire department. The *Master Plan* was developed under the City’s “Plan for 200K” initiative to:

- define the ongoing role of AFRS in helping to protect the health and safety of the community
- outline the department’s future service model, which emphasizes the dual importance of incident prevention and incident response
- guide, using a set of recommended actions, the department’s use of resources in the coming years

CONTEXT

Abbotsford is growing, dynamic community of 141,500 people, expected to reach 200,000 in the next thirty years. It is a diverse community, both in terms of population and economy. It is the hub of the Fraser Valley, a leader not only in the region but in the province as a whole. Its future growth and development are guided by the policies in *Abbotsforward*, the City’s official community plan that was adopted by City Council in 2016.

The AFRS *Master Plan* was developed in a context shaped by the City’s growth, and informed by the directions set out in *Abbotsforward*. The context was also characterized by a set of other important factors, including:

- an increasing demand in the community for the department and its services, as demonstrated by the consistent and considerable increases in call volumes experienced annually
- rising costs to provide municipal services, including those of AFRS, coupled with a perceived resistance to tax increases
- competition for limited resources among competing community needs, and among the departments that provide the services designed to meet these needs
- an expectation that public service providers will be innovative, flexible and accountable in their approaches to service delivery
- increasing demands on firefighters, and changes to the role of firefighters, all of which result in greater mental and physical stress for individual members, and the need for strong action on the part of fire departments everywhere to safeguard firefighters’ health and safety

The recommended actions for AFRS to pursue, put forward in the *Master Plan*, reflect and address these factors.



PROJECT COMMITTEE AND PLANNING PROCESS

The *Master Plan* was developed by a thirteen-member Master Plan Project Committee comprised of:

- the City of Abbotsford Fire Chief
- the Deputy Fire Chief
- the department’s four Assistant Fire Chiefs
- the Administrative Manager
- an Administrative Support staff member (CUPE bargaining unit)
- a member of the Abbotsford Firefighters Union (IAFF Local 2864) Executive
- a representative of the Abbotsford Firefighters Union (IAFF Local 2864) Membership
- a Paid-on-Call District Chief
- the City’s Director of Finance
- the Project Consultant

The Project Committee met several times over the course of an eleven-month, four-stage master planning process. Figure 1.1 outlines the process that was followed.

**Figure 1.1
Master Plan Planning Process**

PROCESS STAGE	DESCRIPTION
Stage 1: Start Up	The process began with a meeting of the Project Committee to review the purpose of the <i>Master Plan</i> , the role of the Committee in guiding the Plan's development, and the process to be followed.
Stage 2: Background	One-on-one interviews with Project Committee members and a range of other AFRS personnel were conducted to understand the opportunities available to, and the challenges facing, the department. Two background papers were prepared to set the stage for the Plan. One paper profiled, in detail, the AFRS as it existed at the outset of the planning period. The other paper relied on Abbotsford, 2016 Census data, and a range of City service plans to understand the changing community — Abbotsford — that AFRS exists to serve.
Stage 3: Service Model	The key service elements that comprise the AFRS service model were examined in the context of the growing city, the health and safety needs of the community, the importance of fiscal discipline, and a commitment to innovation in service delivery. Comparative research on service models and best practices in the broader fire service was undertaken to help develop future actions for the consideration of the Committee.
Stage 4: Master Plan	Based on the results of the Project Committee's efforts, the new <i>AFRS Master Plan</i> was drafted for review by City Council. Council's feedback was incorporated into the <i>Master Plan's</i> final version.

MASTER PLAN

The *Master Plan* consists of eleven sections. Each of these sections, beginning with Section 2, is outlined in the following points:

Section 2: Abbotsford the Community — This section profiles the community that the department exists to service. The section describes the community as it exists today, at the outset of the planning period, but also examines how the community is expected to grow in the coming years.

Section 3: Abbotsford Fire Rescue — Section 3 outlines the department — its purpose, authority, staffing and structure, range of services, budget and assets. The text also highlights the department’s commitment to innovation by reviewing some of the service initiatives introduced in recent years.

Section 4: Guiding Principles — In developing the recommended actions for the *Master Plan*, the Project Committee was guided by a number of principles. These principles, which are reflected in the *Master Plan’s* recommended actions, are set out in Section 4.

Section 5: Prevention of Incidents — Section 5 examines the need for additional resources to be directed towards incident prevention initiatives. Efforts aimed at preventing fires, medical emergencies and other incidents constitute AFRS’ “first line of defence” in its mission to protect the health and safety of the community.

Section 6: Paid-on-Call Firefighters — AFRS and the City of Abbotsford are committed to a composite fire rescue service model that includes a strong POC contingent. The use of POCs, alongside and in support of the department’s career firefighters, assists in making the service both effective and affordable for Abbotsford’s taxpayers. Section 6 examines the challenges the department faces in maintaining a sizable and engaged POC force.

Section 7: Incident Response — The increased emphasis on incident prevention in AFRS’ future service model will help to reduce the number and level of severity of incidents in the community. Efforts aimed at prevention, however, will never eliminate or even significantly reduce total call volumes and the need within the department for a robust response capacity. Section 7 examines the department’s existing approach to incident response, and puts forward actions to guide change.

Section 8: Firefighter Health and Safety — Protecting the health and safety of firefighters — career and POC — is of paramount importance to AFRS. Section 8 of the *Master Plan* reviews ongoing health and safety initiatives in the department, aimed at promoting both the physical and mental wellbeing of members. Recommended actions for additional measures are presented.

Section 9: Emergency Program — AFRS is the department in charge of the City of Abbotsford’s Emergency Program. This section of the *Master Plan* reviews the City’s Program, and identifies resource needs for the coming years.

Section 10: Summary of Recommended Actions — Sections 5 through 9 of the *Master Plan* present a range of recommended actions for the department to pursue in the years ahead. All elements of the department’s service model are addressed in the package of actions put forward. Section 10 brings the information from these earlier sections together into one summary table.

Section 11: Cost Impacts — This final section of the *Master Plan* identifies the capital cost impacts of upcoming changes in the department, including changes put forward in the recommended actions.



RECOMMENDED ACTIONS

The recommended actions presented in the *Master Plan* fit together to define a new service model for the department. The actions, it is important to emphasize, comprise a complete package that should be considered. The success and anticipated benefits of the new service model will be difficult to achieve if individual actions are removed from the collection of recommendations.



SECTION 2 ABBOTSFORD THE COMMUNITY

AFRS exists to serve Abbotsford, the community. What features describe the community as it exists today, at the outset of the new *Master Plan* period? More importantly, how is the community expected to grow in the coming years over the course of the *Master Plan* and beyond? Changes to Abbotsford's land use and development patterns, rate and type of growth, and a host of other factors, will influence the demand for AFRS' services in the years ahead.

This section of the *Master Plan* profiles Abbotsford's key characteristics, and looks ahead to anticipated changes in the community. Much of the information is taken from a background paper on the community and its future that was prepared for the *Master Plan* Project Committee near the beginning of its mandate.¹ The information in the background paper itself was taken from plans and strategies prepared by, for or about, the City of Abbotsford, including:

- *Abbotsforward*, the City's 2016 Official Community Plan (OCP), and associated background planning materials

- the 2016 Census from Statistics Canada
- *My Health, My Community* survey, conducted by the Vancouver Coastal and Fraser Health Authorities in 2013
- the City's 2016 *Community Risk Assessment*²
- the 2017 *Abbotsford Industrial Land Capacity Analysis*, and the *Industrial Land Strategy*

Interviews with managers in the City's Planning and Development Department were conducted to understand the phasing and timing of future development in the City.

COMMUNITY CHARACTERISTICS

Abbotsford is the largest municipality in BC in terms of area, and the fifth largest by population. According to the most recent Census, the City's population grew 5.9% since 2011 to reach 141,397 in 2016, compared to 5.6% for the province as a whole. Over the next 30 years, Abbotsford is expected to grow by another 60,000 people to a population of 200,000.



¹ The background paper, titled *Abbotsford the Community*, is included in Appendix I of the *Master Plan*. Figures in the Paper have been updated for the *Master Plan*.

² The *Community Risk Assessment* is included in Appendix II of the *Master Plan*.

Demographics

Abbotsford's population is aging, similar to that of many communities across BC. Compared to the province as a whole, however, Abbotsford remains a relatively young community. Consider the following points:

- seniors in Abbotsford, aged 65 and older, increased from 14.7% of the population in 2011 to 16.9% in 2016; however, this proportion fell short of the 18.3% figure for all of BC
- the percentage of children under the age of 14 declined from 20.1% of the population in 2011 to 18.4% in the most recent Census; however, even at the lower 18.4% figure, Abbotsford exceeded the same measure for the province as a whole (14.9%)
- the median age in Abbotsford in 2016 was 39.0 years, compared to 43.0 years for the province as a whole

Abbotsford's population is ethnically diverse, with strong representation by people of South Asian heritage. The following statistics examine language use to help illustrate this diversity:

- in Abbotsford, 5.7% of the population speaks neither English nor French, compared to 3.3% of the population for the province as a whole
- the proportion of residents whose first language is neither English nor French is 32.5%, compared to 27.6% for the province as a whole
- a total of 20.1% of residents in Abbotsford speak Punjabi, compared to 4.3% for the province as a whole

Diversity enriches the community and is celebrated in Abbotsford. It also has implications for City firefighters and others who need to be able to engage and communicate with all residents.

Households in Abbotsford are larger than in the province as a whole; as well, more couple families have children. Specifically:

- the average household size in Abbotsford is 2.8 persons, compared to 2.4 persons for the province as a whole
- couples with children account for 53.8% of couple families in Abbotsford, compared to 48.1% for the province

The large (relative to BC) household size and proportion of couple families with children are reflective of Abbotsford's attractiveness to families, and is reflective, as well, of the cultural norms in the community and its multi-generational households.

Socio-Economics

Income statistics in the 2016 Census show some similarities and some differences. Household measures place Abbotsford on par with households in the province as a whole. The data show that:

- median total income for Abbotsford households was \$72,511 compared to \$69,995 for BC
- median income for households with two or more people was \$87,866 compared to \$88,466 for the province as a whole

The same measures for economic families and couple economic families reveal a larger gap between Abbotsford and the province as a whole:

- median total income of economic families in



Abbotsford was \$87,100 compared to \$88,451 for BC

- median income for couple economic families with children was \$105,490 in Abbotsford (average family size of 4.5 persons) compared to \$111,736 for the province as a whole (average family size of 4.0 persons)

The lower median income for economic families with children can be attributed, in part, to the City's agricultural base, which often provides lower paying jobs, and can create income inconsistency. Another reason is that the City is more affordable (although becoming less so) than neighbouring Metro Vancouver municipalities, and therefore attracts families and residents who are priced out of the Metro Vancouver market.

Note that all of the socio-economic and demographic data presented here are for Abbotsford as a whole. The City will receive in late 2018 a geographic breakdown of demographic data by neighbourhood planning area. These data will be useful in helping the City — and AFRS in particular — in tailoring service delivery to different areas of the City.



LAND USE & FUTURE GROWTH

The City's 2016 OCP, *Abbotsforward*, articulates the community's overall direction, including the types of growth anticipated, where the growth will occur, and how growth will be accommodated. The OCP speaks to the importance of:

- a compact Urban Core, complete with a network of Urban Centres connected to one another and the high-density, mixed-use City Centre
- diverse, distinctive and pedestrian-friendly neighbourhoods with a range of housing options and ample employment opportunities
- a strong Urban Development Boundary (UDB) within which residential and employment growth are focused
- multi-modal travel opportunities between and among Urban and Neighbourhood Centres, including a Primary Transit Corridor from Clearbrook Urban Centre, through the City Centre, to the UDistrict Centre

Residential

Almost all future growth will be contained within the existing UDB; growth will not be allowed to encroach on agricultural and rural lands. Seventy-five percent of residential growth, representing 45,000 new residents, will be in the City Centre, the four Urban Centres and the 14 Neighbourhood Centres (see Figure 2.1). Of this number:

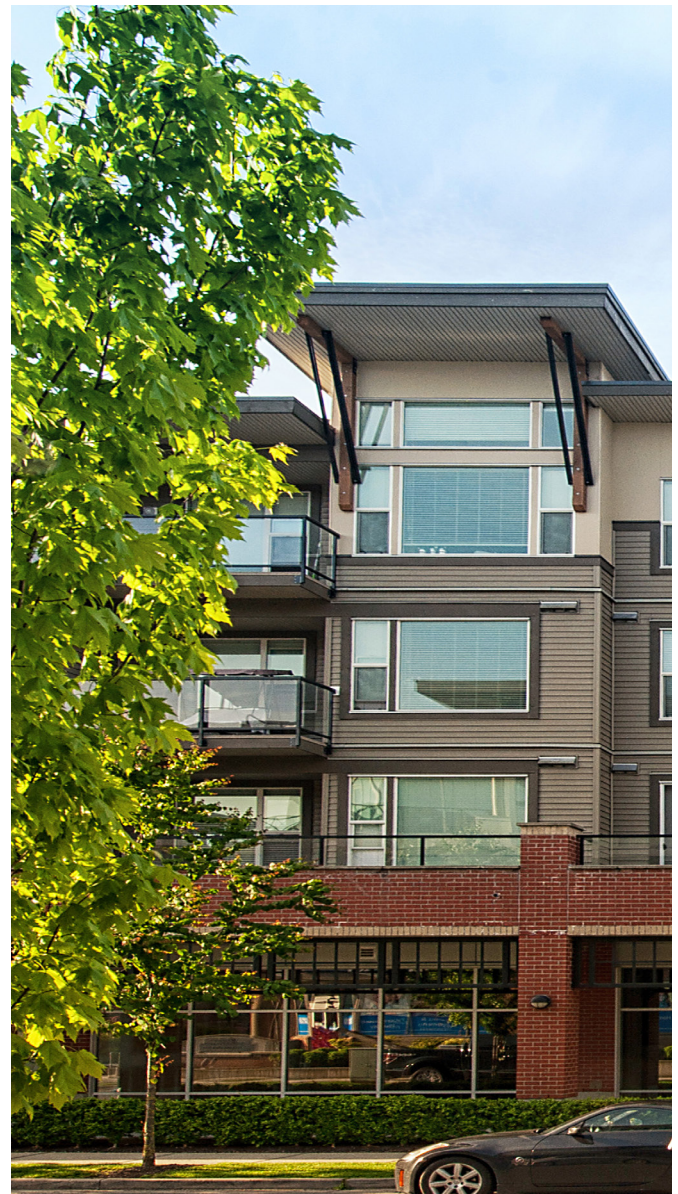
- 35,000 will be focused in the City Centre and Urban Centres (collectively, the Urban Core)
- 10,000 will be directed to the existing neighbourhoods and Neighbourhood Centres outside of the Urban Core

The remaining 25% of new growth, representing 15,000 people, will occur in the New Neighbourhoods (shaded grey in Figure 2.1). Taken together, the hillside developments of Auguston, Vicarro Ranch and McKee Peak that comprise the New Neighbourhoods have relatively little development in place today, at the outset of the *Master Plan* period. Some development has been approved for Vicarro Ranch; however, on the whole, development in these areas is not expected to begin in earnest until 2023.

In 2016, only 2% of the City's housing stock consisted of apartment buildings five storeys or higher. This situation will change in the years ahead in the City Centre and Urban Centres. Multi-family residential wood-frame construction of up to six storeys will be allowed in all of the Urban Centres; residential towers with many more storeys will be permitted in the City Centre.

Already (at the time of writing) City Planning quarterly reports show that 65% of approved residential units, and over 70% of units under review are in multi-family developments — a reversal from the single-family dwelling focus of past years.³

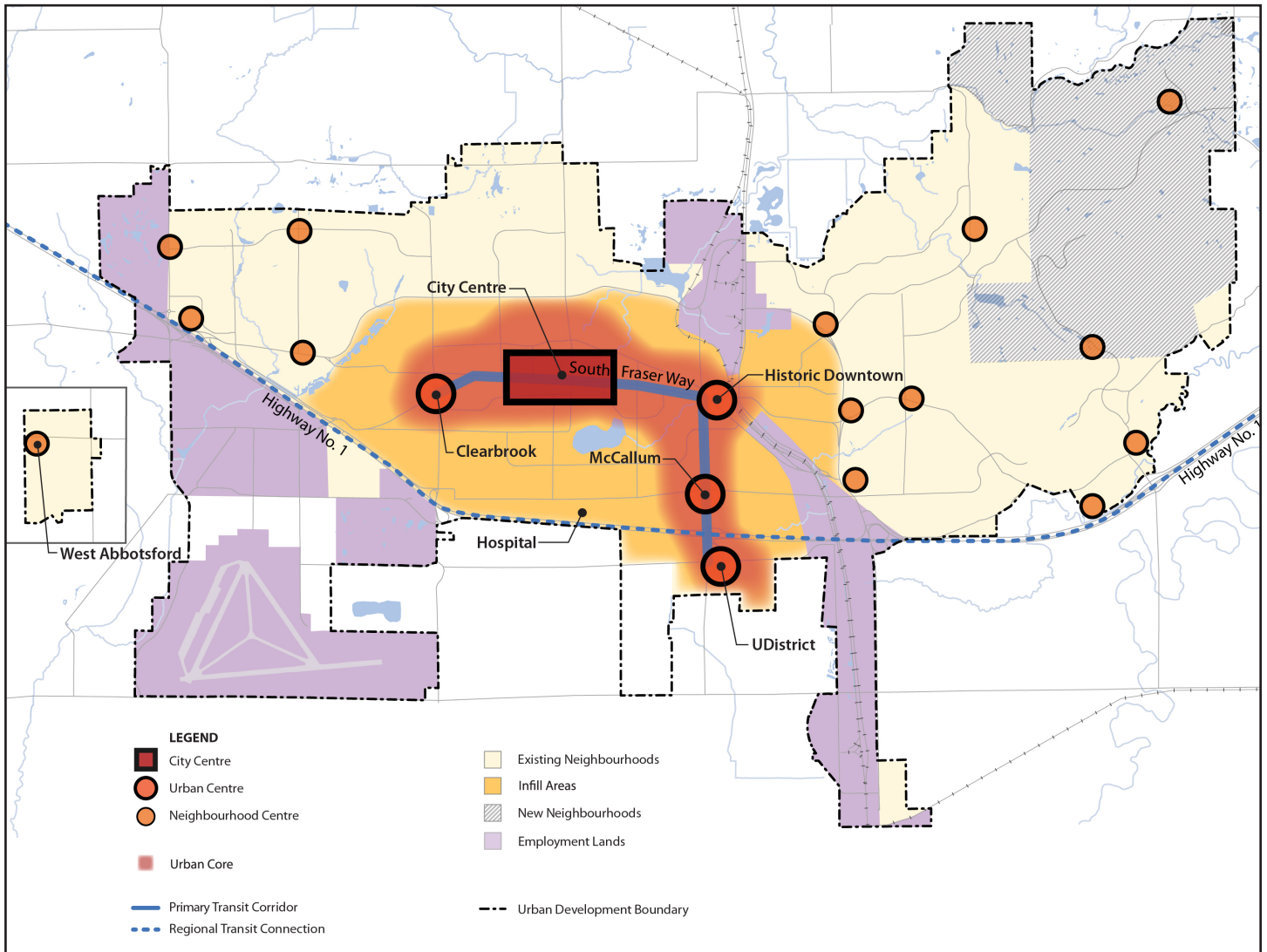
Higher density buildings present specific challenges to AFRS, both in terms of suppression and the treatment of large numbers of displaced persons during fire events.



³ See 2017 Fourth Quarter Report, Planning & Development Services.

Existing low-density neighbourhoods are adding units in the form of duplexes, small lot singles, coach houses and secondary suites. In some areas, creating smaller lots, coach houses, townhouse strata developments and extra units in single-family neighbourhoods can make access challenging. Other times, extra density in these areas is invisible, as it is contained within the existing dwelling. Legal suites and coach houses conform to *BC Building Code* requirements for fire separation, exits and smoke alarms; but illegal suites, created in some cases without sufficient regard for code requirements, can increase risk of fire and the spread of fire in residential areas.

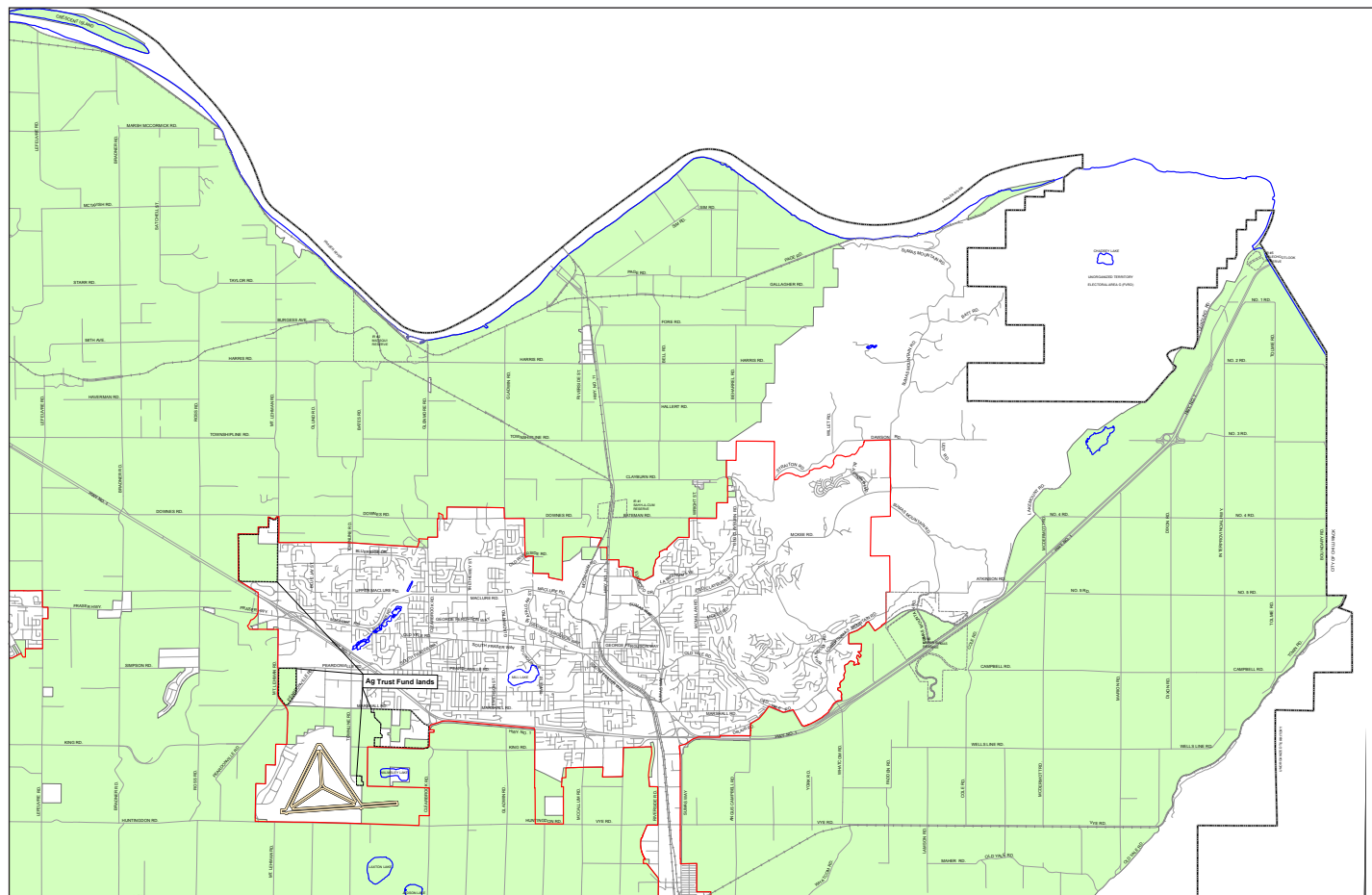
**Figure 2.1
Future Growth**



Agricultural

Approximately 75% of the City is contained within the Agricultural Land Reserve (ALR) (see Figure 2.2). The prominence of agriculture as a land use, but also as an economic pillar, helps to define the City. Close to 1,300 farms operate in the community, employing more than 7,000 people. More than 2,500 hectares are dedicated to blueberry production, and another 1,300 ha are used to cultivate raspberries. Livestock is also key — one-third to one-half of BC’s chicken, dairy, eggs and turkey is produced in Abbotsford

Figure 2.2
Agricultural Land Reserve (ALR) Lands in Abbotsford



 ALR  Urban Development Boundary

The City is home, as well, to a significant portion of BC’s food processing sector, from berry packing houses to frozen food plants, egg grading and processing facilities, poultry hatcheries and processing plants. On-farm processing is becoming more prevalent, with some farms contemplating increases to the size of their processing facilities. Some facilities recently constructed include a liquid fertilizer processing plant, an ice cream processing plant, and facilities for processing beer, cider and wine.

Processing operations can pose challenges for AFRS. Abbotsford has several mushroom growing and composting facilities, for example, which can create specific hazards such as the presence of hydrogen sulfide (H₂S). Exposure to H₂S can cause a wide range of health effects; at high concentrations exposure can lead to death. In addition, H₂S is a highly flammable, explosive gas that can create potentially life-threatening situations if not properly handled. The gas burns and produces other toxic vapours and gases (e.g., sulfur dioxide) which pose risks for firefighters.

In addition to these more industrial-style processing facilities, 80 ha within the ALR are occupied by glass greenhouses, and another 28 ha by plastic covered greenhouses. These operations pose unique firefighting challenges. Access to the structures can be difficult given their remote locations along rural roads, not all of which will have water infrastructure for fire suppression in place. Two of the most significant fire incidents in 2015 were a greenhouse fire and a barn fire at a dairy farm.

Industrial

Although it currently comprises less than 5% of the City’s land base, the City’s industrial land plays a significant role in the economy: industrial labour in Abbotsford constitutes 30% of the total labour force today. In 2004, an assessment of the industrial land inventory in the City resulted in the designation of an additional 180 hectares (445 acres) of industrial lands in the 2005 OCP. Much of that land has been developed in the intervening years. Demand for industrial land remains high — in 2016, the City had applications for 70,000m² of new industrial floor space awaiting approval, which is the highest amount for any period in the last decade. New approved industrial floor space in 2016 exceeded the 5-year and 10-year averages.



SECTION 3 ABBOTSFORD FIRE RESCUE SERVICE

This section profiles the AFRS as it existed during the *Master Plan* planning process. The text provides an overview of the department's:

- authority to operate
- strategic guidance and governance
- staffing level
- services
- response to incidents
- inspections
- training
- community fire safety education
- finances
- fire halls and apparatus

The text also highlights the department's commitment to innovation by reviewing some of the service initiatives introduced in recent years. The section ends with some commentary on the AFRS' existing service model.

The information in this section is taken, in large part, from a second background paper that was prepared for and reviewed by the Project Committee at the outset of the master planning process in mid-2017.⁴ All of the data from the background paper that are included in the *Master Plan* have been updated to include full-year 2017.



⁴ The Community Risk Assessment is included in Appendix II of the Master Plan.

AUTHORITY TO OPERATE

Similar to all municipal fire departments in British Columbia, AFRS receives its authority to operate from various provincial statutes, the three most important of which are the *Fire Services Act*, the *Fire Department Act*, and the *Community Charter*. These statutes are described in Figure 3.1.

**Figure 3.1
Governing Provincial Statutes**

STATUTE	DESCRIPTION
Fire Services Act	<p>Authorizes and directs Council and the department (through the Fire Chief and Local Assistants to the Province’s Fire Commissioner) to conduct fire investigations, and to conduct regular inspections of hotels and public buildings for compliance to the BC Fire Code. Also allows Local Assistants to enter any premises to investigate possible fire hazards.</p> <p>The Fire Services Act is being replaced by the Fire Safety Act. The latter statute received Royal Assent in 2016 and will be brought into force once accompanying regulations have been developed. The statute will, among other points, provide an opportunity for AFRS to change its approach to inspections (see Section 5 of the <i>Master Plan</i>).</p>
Fire Department Act	<p>Governs the working hours and two-platoon system for all municipal fire departments with career firefighters. (The hours and shift patterns in the Act are constraints that have been taken into account in the development of recommended actions in the <i>Master Plan</i>.)</p>
Community Charter	<p>Gives broad authority to Council to provide any service, including fire rescue, that Council deems necessary to meet the needs of the community.</p>

At the municipal level, the authority for AFRS to operate is outlined in the City’s Fire Service Bylaw, 2006. The bylaw sets out the:

- services that AFRS is authorized to provide
- authority of the Fire Chief
- fire safety requirements for owners of different building types
- rules of conduct for persons who are in contact with fire service staff operating under the bylaw
- fire prevention regulations in place
- authority related to the inspection of premises
- requirement for fire safety plans (conducted to protect occupants, but also used to help develop pre-incident plans)
- requirements related to fire hydrants, alarm systems and other equipment

The bylaw also identifies the situations in which the fire department may charge fees for services provided. Fees are payable for false alarms, alarm system maintenance, alarm testing, burning permits, inspections, responses to specific types of incidents, fire reports, and special events.

STRATEGIC GUIDANCE AND GOVERNANCE

Council Strategic Plan

The City's Strategic Plan, created by City Council with input from senior management and the community, guides the activities and planning efforts of all City departments, including AFRS. Central to the plan are four cornerstones (i.e., strategic priorities) that are designed to position the City as the "Hub of the Fraser Valley", and a municipality focused on excellence in service delivery. These cornerstones are presented in Figure 3.2.

Figure 3.2
Council's Guiding Cornerstones



Vibrant Economy

The City seeks to bolster its role as a hub of creativity and innovation, and as a meeting place for talent, investment and business.



Complete Community

Inclusive, safe, green neighbourhoods, connected to one another and commercial centres by efficient transportation. Cultural diversity and natural beauty are foundations for growth. Investment in public safety and protective services is highlighted.



Fiscal Discipline

Transparency and accountability are key, as is the need for a long-term view on maintaining and upgrading City assets. Regular reviews of service levels are important.



Organizational Alignment

The alignment between governance and operations is critical. Efficiency and effectiveness in service delivery are underlined, as is the important of a workplace that promotes a culture of innovation, employee development and safety.

AFRS supports these cornerstones through its services, and through its commitment to (and record of) innovation.

Service Governance

The City of Abbotsford Council is the community's elected governing body. It has responsibility over the City Administration and the services provided through its departments, including AFRS. Council sets the budgets that direct AFRS in its delivery of services. In making its decisions, Council relies on the advice of the City Manager and the Fire Chief. Council also relies on input from the City's Public Safety Advisory Committee on matters related to AFRS' services.

Under the City's *Fire Service Bylaw, 2006*, Council has identified the Fire Chief as the senior manager with responsibility, under the supervision of the City Manager, "to manage and supervise the Fire Rescue Service and all Fire Rescue Service personnel, and exercise care, custody and control of all buildings, apparatus and equipment of the Fire Rescue Service."

STAFFING LEVEL AND STRUCTURE

Staffing Level

At the time of writing, AFRS is comprised of 208 staff, divided into four different groups (see Figure 3.3):

- career firefighters, represented by the Abbotsford Firefighters Association (Local 2864), who are divided into suppression (incident response), training and fire prevention
- paid-on-call (POC) firefighters
- support staff and an Emergency Advisor, represented by the Canadian Union of Public Employees (CUPE) (Local 774)
- exempt employees, including the Fire Chief, Deputy Fire Chief, four Assistant Fire Chiefs and the Administrative Manager

**Figure 3.3
AFRS Staffing Levels**

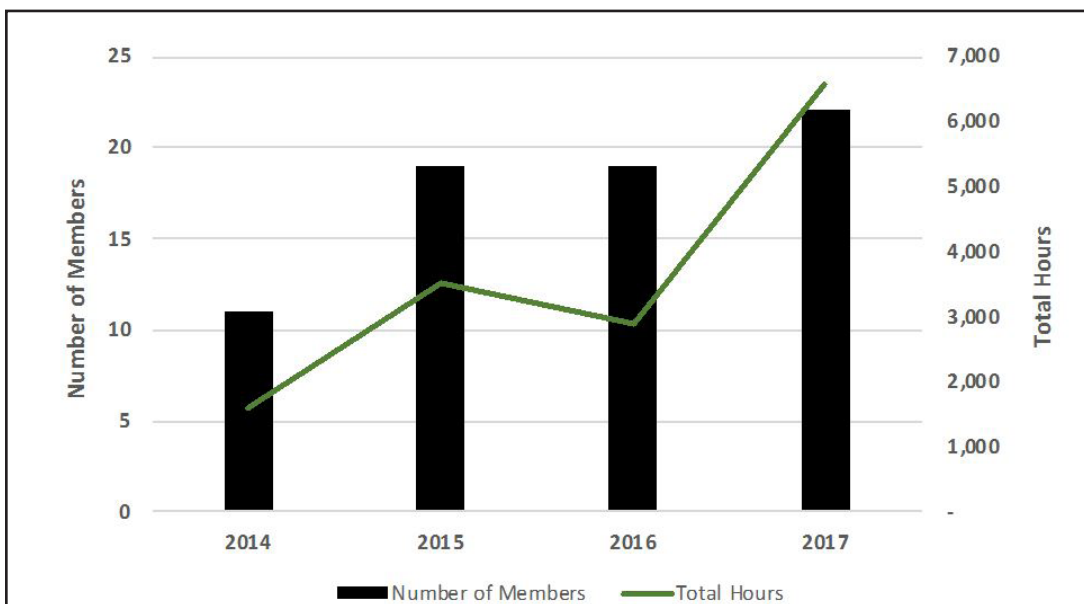
STAFF GROUP	2013	2014	2015	2016	2017
Career Firefighters (IAFF)					
Suppression	82	82	82	*83	*83
Training	2	2	2	2	2
Fire Prevention	5	5	5	5	5
Sub-Total Career	89	89	89	90	90
Paid-on-Call	106	106	106	106	106
Support and Emergency Advisor (CUPE)	5	4	4	5	5
Exempt	7	7	7	7	7
TOTAL STAFF	207	206	206	208	208

In addition to these staff, AFRS pays the costs associated with two mechanics in the City’s Fleet Division who are dedicated to AFRS vehicles. The department also funds a portion of IT and Finance staff who are assigned to the department. As Figure 3.3 shows, AFRS’ core staffing level has remained essentially unchanged over the past five years. Staff numbers in all areas of the department have remained flat despite a significant increases in calls for service over the period (see later in this section). Staffing has also remain flat in the face of increased long-term absences within crews as a result of illness, including illness related to stress and burnout. Figure 3.4 on the following page gives an indication of the growing impact of illness-related absences on the department.⁵ Absences are presented in terms of total hours for all incidents of long-term illness, and total number of members away from work as a result of long-term illness.

Gains in productivity and innovation in service delivery have helped the department maintain its commitment to provide a high level of service to the community. At times, however, the department has struggled to meet all of the community’s needs. Within AFRS, for example:

- the number of fire safety inspections required by Council policy has consistently exceeded the department’s capacity to perform them

**Figure 3.4
Long-Term Illness**



⁵ Long-term illness is defined as more than 100 hours of work lost to sick time for an individual member in a given year.

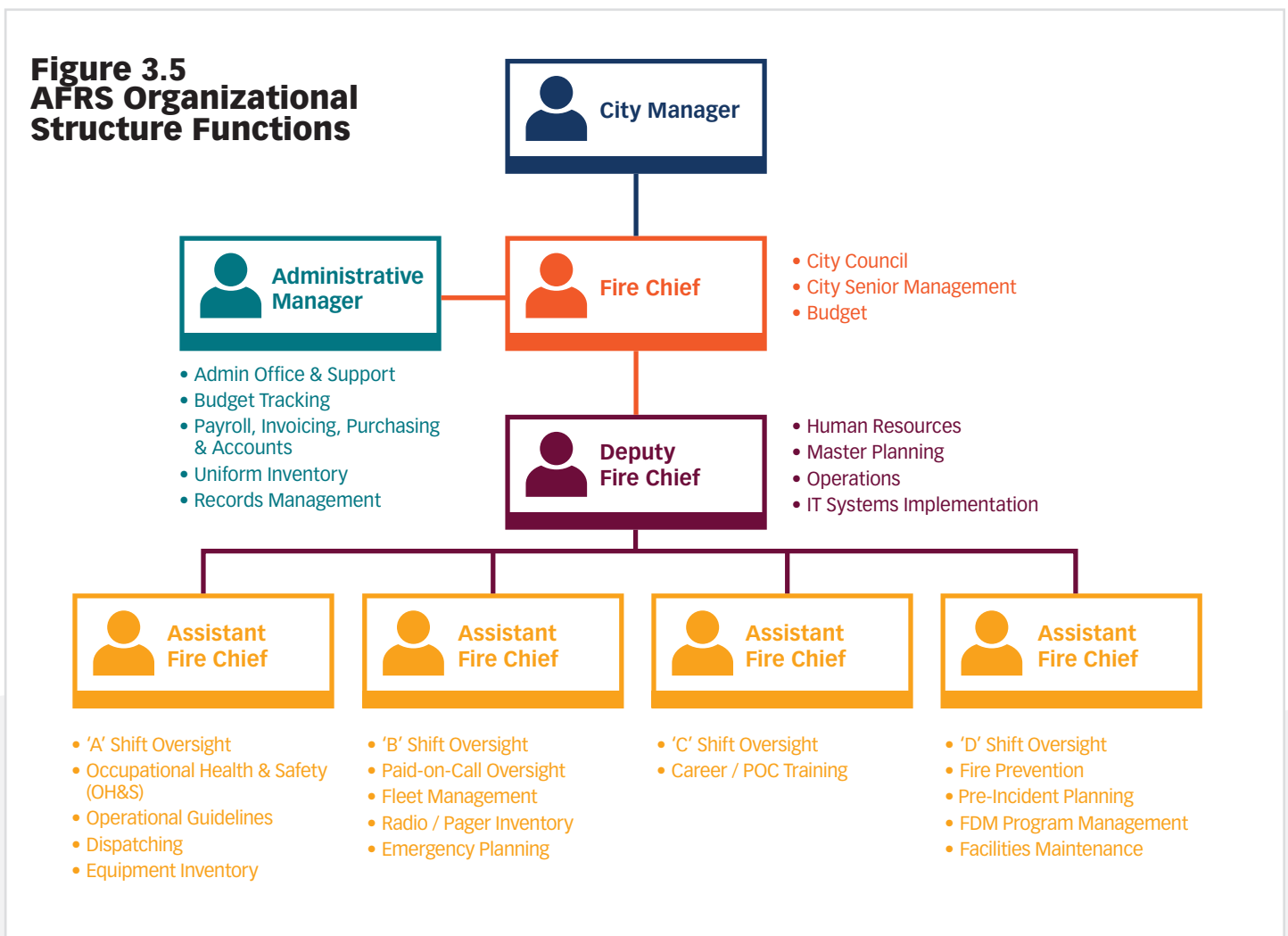
- existing community education and incident prevention efforts have been minimized or discontinued
- resources to develop new education and prevention programs have been largely re-directed to support core suppression levels
- fire crews, both career and POC, have been taxed in their efforts to provide adequate back-up during major call-outs

The recommended actions in this *Master Plan* address the existing and future service challenges facing the department, as well as the service needs of the community. Certain actions focus on the department’s staffing levels; others speak to the need for changes to the service model. Together, as a package, the actions set a direction for the future.

In a separate initiative in early 2018, outside of the master planning process, City Council announced the hiring of six additional career firefighters to bolster the department’s core staffing. The initiative recognizes the current challenges facing crews, and provides some immediate relief. The new firefighters will be in place by the end of Q2 2018.

Organizational Structure

Figures 3.5 and 3.6 present the department’s current organizational structure. Figure 3.5 identifies the various functions and responsibilities that fall under the department’s seven exempt positions. Figure 3.6 shows the staffing complement under each position.

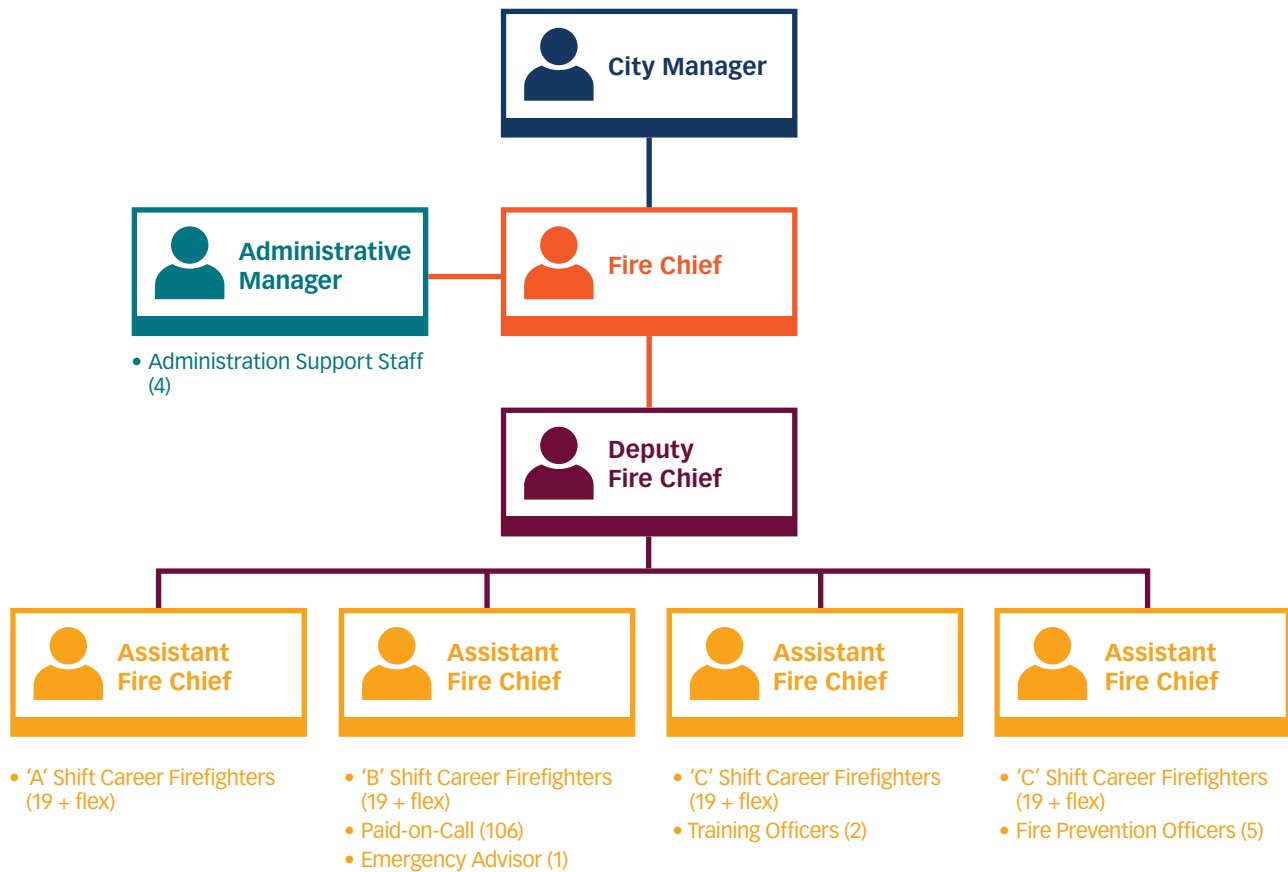


SERVICES

The City's *Fire Service Bylaw, 2006*, authorizes AFRS to provide the following services:

- fire protection, broadly defined in the bylaw (see definitions) to cover “all aspects of fire safety including, but not limited to, fire prevention, firefighting or suppression, pre-incident planning, fire investigation, public education, information and training and other staff development”
- medical assistance as first responders in support of the British Columbia Ambulance Service
- rescue of people from potentially dangerous situations
- mitigation of hazards and the rescue and care of patients injured in motor accidents
- identification of dangerous goods and the mitigation of associated hazards

Figure 3.6
AFRS Organizational Structure
Staffing Complement



Training is a key function of the department. It is provided out of the fire halls, but also from the department's separate training centre. All career crews are trained to the Full Service Level as identified in the *Structure Firefighters Competency and Training Playbook (Second Edition)*, published by the Office of the Fire Commissioner. At this level, firefighters are equipped and trained to provide the full spectrum of fire services.⁶ All AFRS career firefighters are also trained, to an operational level, to provide specialized response to incidents involving hazardous materials (i.e., Hazmat response), and requiring confined space and technical high angle rescue. Career firefighters located at Halls 2 and 8 receive are trained to a higher level on these specialized services.

POC crews at AFRS are trained either to the Exterior Operations Service Level in the Playbook, or the Interior Operations Service Level. As the terms suggest, firefighters with exterior level training are qualified only to participate in fire operations outside of structures. Interior level members may enter simple structures.

AFRS is responsible for developing and maintaining the City's Emergency Program. This program anticipates and prepares for disasters in the community. It is supported by three teams of volunteers, including:

- Abbotsford Emergency Support Services, whose members assist residents with basic needs during and immediately following disasters
- Abbotsford Communications Services, comprised of amateur radio operators who assist with communications during disasters
- Central Fraser Valley Search and Rescue, whose members specialize in technical search and rescue operations

Finally, AFRS is responsible for providing fire dispatch. This service has been contracted for several years to the Fraser Valley Regional District. In Q1 2019, however, dispatch will be moving to EComm 911.

RESPONSE TO INCIDENTS

Each year, AFRS responds to a significant and growing number of emergencies using its career firefighters and its POC members. Figure 3.6 shows the total number of incidents per year from 2013 through the end of 2017. For each year, the total is divided as follows:⁷

- medical assistance
- motor vehicle incidents
- unwanted fire alarms (i.e., alarms with no fire)
- fires
- hazardous materials
- other

The data in Figure 3.7 indicate that there has been a steady increase in the total number of incidents — 66% — since 2013, as well as increases in key types of incidents such as medical, MVI and alarms (no fire). The number of fires in 2017, at 448, was below the five-year average of 478.

Not shown in Figure 3.7 are the distribution of incidents by time of day, the distribution by day of the week, and the distribution by time of year. Other data available through the department's FDM system shed light on these points:

⁶ The services are based on the Competencies included in the National Fire Protection Association (NFPA) 1001 Firefighter 2 Standard, as well as NFPA 1021 Fire Officer Standards.

⁷ Beginning 2014, "public service" and "police assistance" calls were broken out from "other" calls.

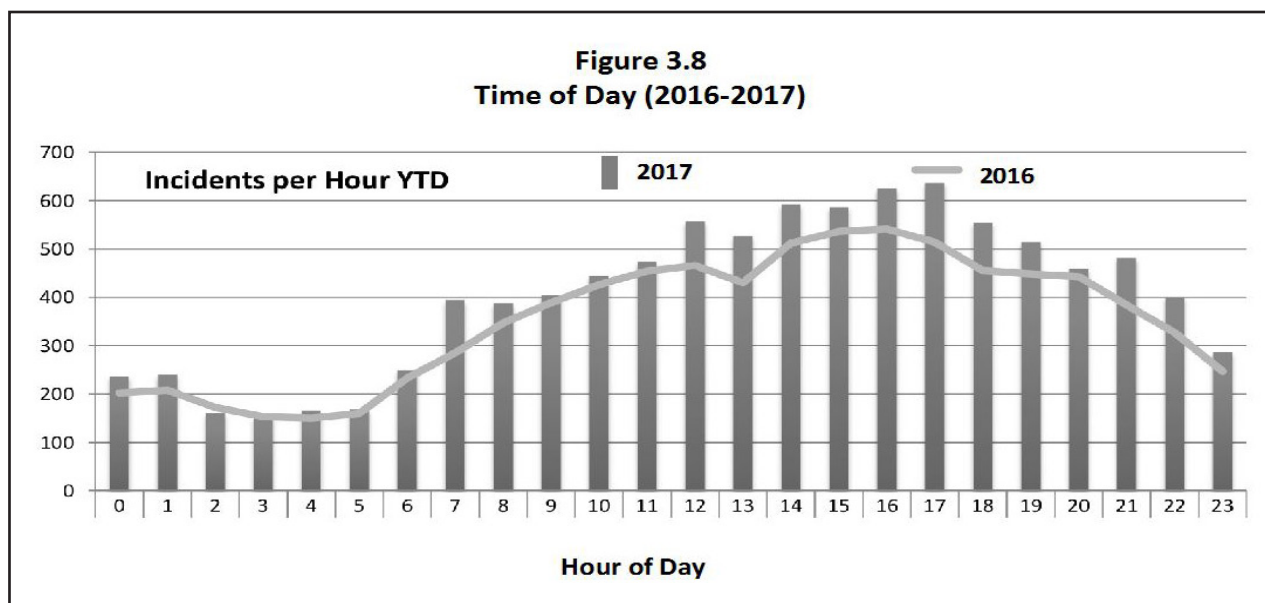
**Figure 3.7
AFRS Response – Incidents**

INCIDENTS	2013	2014	2015	2016	2017
Medical	2,793	2,980	3,455	3,987	4,287
Motor Vehicle Incidents	856	1,045	1,293	1,698	1,785
Alarms (no fire)	806	832	868	971	1,072
Fires	494	505	563	380	448
Hazardous Materials	94	110	151	143	120
Public Service		244	311	401	521
Police Assist		74	83	95	94
Other*	671	433	586	710	1,180
TOTAL	5,714	6,223	7,310	8,385	9,507

** The high number of "other" calls in 2017 was attributable to incidents involving hydro lines being down, particularly in December.*

- **Time of Day** — The consistent pattern, year over year, shows a steady increase in daily incidents from approximately 04:00 to 17:00, followed by a steady decrease through the evening and overnight. Figure 3.8 illustrates this trend using incident data for 2016 and 2017.
- **Day of Week** — There is also year-over-year consistency in incident volumes by day of week. In 2015 and 2016, and in 2017 in particular, call volumes on Friday were up to 25% higher than on other days of the week.
- **Time of Year** — Prior to 2016, the general trend saw monthly increases in the number of incidents over the summer months of June to September. In 2016, by contrast, the highest monthly figures were recorded in the fall and winter. In 2017, call volumes spiked significantly in December to more than double the volumes in the quietest months of March and April. The spike was attributable to winter storms, and the high number of fallen hydro lines.

**Figure 3.8
Time of Day (2016-2017)**



INSPECTIONS

Under Fire Services Act, AFRS is required to conduct regular inspections of hotels and public buildings (broadly defined as any building, publicly or privately owned, in which people may congregate). Specialized and complex inspections are performed by Fire Prevention Inspectors in the department. More routine inspections — referred to as “company inspections” — are performed by on-shift fire crews.

Figure 3.9 shows the number of inspections completed by Inspectors and by on-shift crews. As illustrated, in all years the department has been unable to meet the total inspection workload. To be sure, the annual number of inspections outstanding (i.e., not performed) is not large. What the data do not show, however, is that the first two months of each year are spent completing the inspections from the previous year. The number of inspections outstanding, therefore, is greater at the end of each calendar year than Figure 3.9 indicates.

TRAINING

AFRS is responsible for ensuring that its career firefighters and POCs have the training and certification required to respond to the various types of incidents that the department attends. As noted earlier, career members are trained to the Full Service Operations Level, as outlined in the Structure Firefighters Competency and Training Playbook (Second Edition), published by the British Columbia Office of the Fire Commissioner.

**Figure 3.9
Inspections**

INSPECTIONS	2013	2014	2015	2016	2017
Total Demand	3,564	2,269	3,217	2,698	3,319
Inspections Conducted					
Inspections by Fire Prevention	1,878	842	1,217	956	1133
Inspections by Crews	1,631	1,402	1,920	1,729	2086
	3,509	2,244	3,137	2,685	3,219
Inspections Outstanding	55	25	80	13	100

Note that the number of inspections fluctuates each year based on the department’s inspection schedule. Some types of buildings in the schedule require annual inspections; others require biennial inspections. Re-inspections are performed by Inspectors, and are included in the numbers. The total 2018 number of inspections required is 3,180.

POCs are trained to provide medical assistance and to fight fires. Some members are trained to the Interior Service Operations Level in the Playbook, and are therefore qualified to enter buildings in fire situations. Other POCs have not yet obtained their Interior status, but are qualified at the Exterior Service Operations Level to fight fires from outside of buildings.⁸

The importance of training to the department, and to public safety, should be emphasized. AFRS has invested considerable energy and other resources in improving training levels in recent years, and in focusing training efforts on the types of events that career and POC fire fighters will encounter. Training is very much a core function of the department.

⁸ All POC’s were qualified to enter buildings under the earlier version of the *Playbook*. The distinction between Exterior and Interior levels that was introduced in 2015, however, required POC’s to acquire new certification for interior operations. POC’s are in the process of obtaining this certification.



Training Centre

Much of the training provided by the department occurs at the state-of-the-art AFRS Training Centre. The centre's presence in the City, and its operation by AFRS, positions the department to provide a significant amount of training for crews during shift times — that is, "on-shift" training. This approach has enabled the department to manage its overtime labour costs, which are incurred when crews are trained outside of shift times. Consistent and significant increases in call volumes combined with flat staffing levels, however, are having some impact on the ability of crews to train, uninterrupted, during shifts. The department may need to consider off-shift training as an option for certain training tasks in the coming years.

COMMUNITY FIRE SAFETY EDUCATION

Fire safety education is a component of AFRS' fire prevention division. Each year, the department spends some time working directly with target groups — students, vulnerable youth, seniors — to raise awareness of fire risks and potential impacts, and to change behaviours. Education recognizes that efforts to prevent incidents from happening, and to decrease the severity of incidents that do occur, help to reduce the need for emergency response, and have a positive impact on the overall level of community health and safety.

Over the past 15 years, as resources have been focused on meeting growing needs in response, training and inspections, fire safety education has become less of a priority in the department. Education programs do continue to be offered; however, the department's investment of time, personnel and funding in these programs has been reduced.

SERVICE FINANCES

Figure 3.10 presents the AFRS' actual net operating expenses (including annual transfers to capital reserves) for the years 2013 through 2017. The following points highlight some observations on the financial information presented:

Revenues — The revenues listed in Figure 3.10 are the non-tax revenues raised by the department. As illustrated, AFRS generates relatively little revenue. This finding is not surprising given the broad social benefit (and the resulting reliance on property taxes) associated with municipal fire rescue services.

Incident Response — By far the largest category of expense for the department is Incident Response, which is comprised primarily of suppression activities. This component of the department's finances increased close to 16% since 2013, and accounted for 85% of the department's total cost in 2017.

Prevention and Inspection — This cost category has increased 34% since 2013. In absolute dollar terms, however, the category accounted for only 4% of the department's 2017 expenses.

Community Fire Safety Education — This category increased only 4.4% since 2013, and accounted for only 1% of the department's 2017 budget.

As a percentage of the total 2017 City of Abbotsford operating expenditures, AFRS accounted for 8.9% (net of amortization). This percentage was the same as in 2015 and 2016, but was lower than the 10.0% figure in 2013.

Figure 3.10 AFRS Net Operating Expenses

	2013	2014	2015	2016	2017
	Actual	Actual	Actual	Actual	Actual
REVENUE					
Fees and Charges	(213,000)	(244,000)	(307,000)	(348,000)	(277,000)
Licenses and Permits	(9,000)	(6,000)	(5,000)	(4,000)	(7,000)
EXPENSE					
Administration	516,000	485,000	469,000	507,000	573,000
Fire Safety Education	158,000	175,000	143,000	171,000	165,000
Fire Prevention and Inspection	449,000	604,000	555,000	652,000	601,000
Incident Response	12,613,000	13,939,000	13,587,000	13,798,000	14,587,000
Fire Halls and Grounds	499,000	413,000	449,000	439,000	465,000
Fire Flows and Hydrants*	190,000	209,000	213,000	231,000	289,000
TRANSFERS					
Transfer to Capital Reserve	797,000	797,000	797,000	791,000	791,000
Other Transfers	-	(668,000)	-	71,000	(202,000)
TOTAL NET EXPENSES	15,000,000	15,704,000	15,901,000	16,308,000	16,985,000

* The budget for Fire Flows and Hydrants was transferred to the Engineering Department in 2018.

STATIONS AND APPARATUS

AFRS' service area covers the entire City of Abbotsford. The department operates from eight separate fire halls, including three career halls, four POC halls and one composite hall. The individual halls are listed in Figure 3.11.

Figure 3.11
AFRS Fire Halls

CAREER HALLS	POC HALLS	COMPOSITE HALL
Fire Hall 1 (Clearbrook) 32270 George Ferguson Way	Fire Hall 3 (Aberdeen) 28465 Fraser Highway	Fire Hall 6 (Abbotsford) 2427 West Railway Street
Fire Hall 2 (Sumas Prairie) 35995 North Parallel Road	Fire Hall 4 (Matsqui Village) 5775 Wallace Street	
Fire Hall 8 (Blueridge) 30811 Blueridge Drive	Fire Hall 5 (Mr. Lehman) 30373 Merryfield Ave	
	Fire Hall 7 (Sandy Hill) 34989 Old Clayburn Road	

The career halls and the composite hall are all located within the UDB; with the exception of Hall 7, all POC halls are located in the rural parts of the City. Seven of the eight halls (the exception is Hall 3) are located north of Highway 1. All eight halls are shown in figure 3.12.

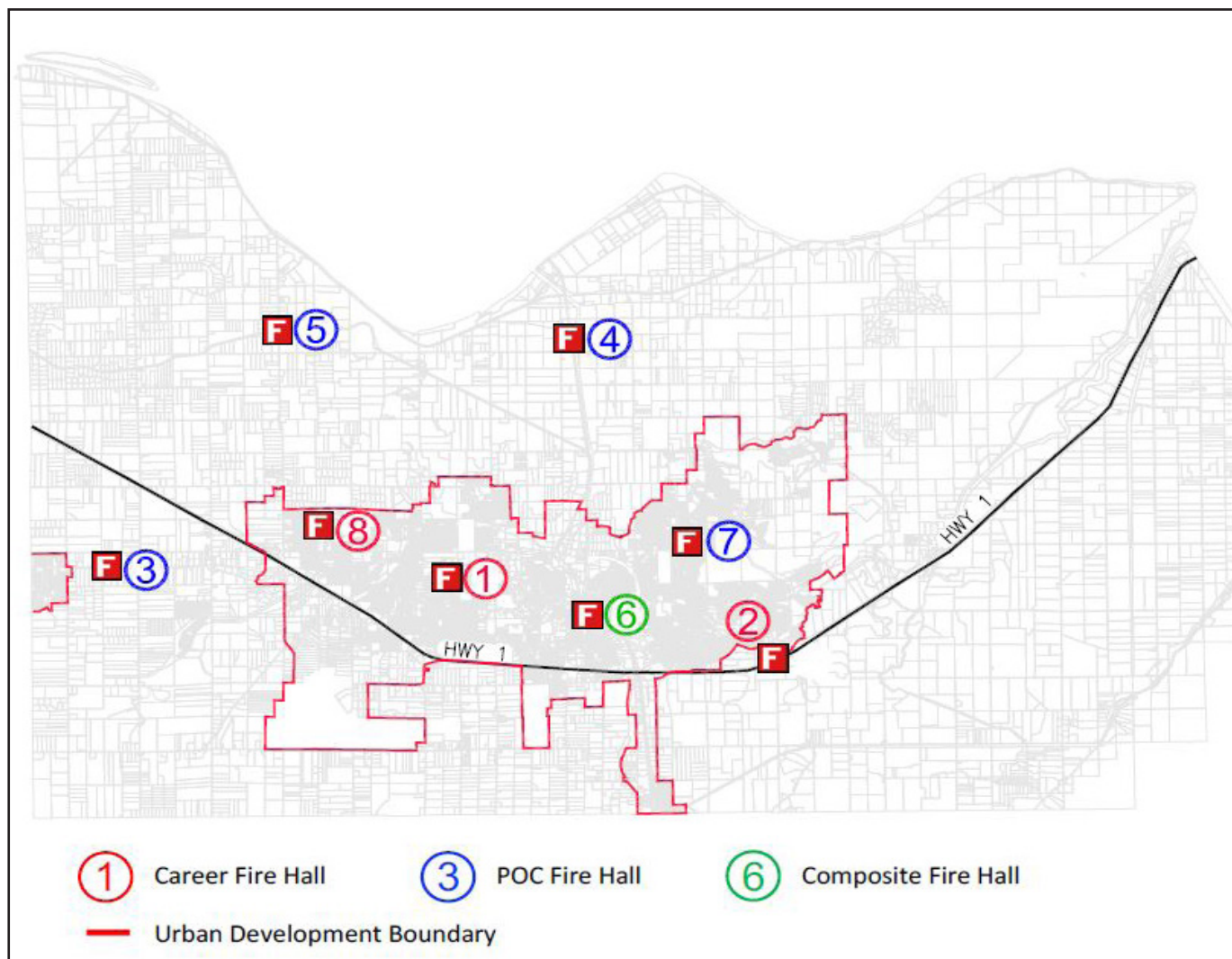
The department has a broad range of vehicles, including:

- 13 engines
- 2 ladder trucks
- 4 tenders
- 3 specialty units (Hazmat, wildland interface, air light squad)
- 1 special operations trailer

At the time of writing, there are no smaller medical/rescue vehicles built for two-person crews. As a consequence, four-person engines are used to respond to all types of incidents, including medical calls.



Figure 3.12
Location of AFRS Fire Halls



In addition to the main apparatus, the department has a number of small, non-emergency vehicles assigned to Fire Prevention Inspectors and Chiefs. There are also some trailers and other apparatus located at the training centre. All vehicles are managed and maintained by the City's Fleet Division.

INNOVATION

AFRS plays a critical role in helping to keep the community healthy and safe. The department also serves to help protect the City's built and natural environment from loss as a result of fire. Council and the community rely on AFRS to function at a consistently high level.

Fixed staffing levels in the face of significant increases in calls for service have challenged the department's ability in recent years to meet service expectations. A culture of innovation, however, has enabled the department for the most part to maintain high service levels using available resources. Figure 3.13 identifies some examples of the department's innovations that are in place today, or that are set to be introduced in the near future.

Figure 3.13 Examples of Innovation

INNOVATION	DESCRIPTION
Use of POCs	AFRS is a composite department that, unlike others, has been able to maintain a robust roster of POCs, and integrate its POC and career contingents for the benefit of the community. Maintaining POC numbers and attracting POC recruits are significant challenges facing the department (see Section 6). AFRS remains committed, however, to meeting these challenges and remaining a composite service.
Flex Firefighters	AFRS has the ability to schedule six career firefighters in flexible ways to both meet staffing needs and minimize overtime costs. The flex firefighter system was implemented with the agreement of IAFF Local 2864 through a Letter of Understanding in the Collective Agreement (expires in 2019).
Superior Tanker Shuttle	<p>AFRS' superior tanker shuttle initiative allows the department to provide water at urban fire flow levels to properties in rural parts of the City that are not serviced by fire hydrants. Water is provided using tankers from different halls in a relay system.</p> <p>In 2010, AFRS received the Superior Tanker Shuttle Accreditation from the Fire Underwriters Survey. This accreditation qualifies property owners for hydrant-protected equivalency, which in turn qualifies them for lower fire insurance premiums.</p>
"Who's Responding"	When POC crews are required to respond to calls, either as first responders or in a support capacity, Fire Dispatch sends a page to all POC members. Using simple technology, the "Who's Responding" initiative enables the Duty Chief to know quickly how many POCs, at each level of training, are able to respond.
SCBA Maintenance	AFRS trains members to maintain all of the department's self-contained breather apparatus (SCBA).
Live Move-Up-Module	The Live Move-Up-Module (LiveMUM) initiative makes use of predictive technology and the department's dispatch service to physically re-position engines to fill temporary gaps in different parts of the City. AFRS purchased the software for the Fraser Valley Regional District fire dispatch, which has been the department's dispatch provider for several years. The FVRD, however, was unable to operationalize the system. LiveMUM will be offered through the new dispatch provider — EComm 911 — once the department shifts to the new dispatch system; quarter one of 2019.
Hose Testing and Repair	The POC contingent in AFRS has taken responsibility for testing and repairing all hoses in all fire halls across the City.
Training Centre	The department's own training centre, introduced earlier, provides the potential for savings through the on-shift training of crews. Call volume increases combined with flat staffing levels, however, may require the department to consider off-shift training as an option for certain tasks in the coming years.
Pre-Incident Plans (PIPs)	Career staff use APX information software technology to collect PIP data on mobile devices. Data are automatically uploaded, without additional administration interface for access by all AFRS members.

These initiatives and others speak to the culture of innovation within AFRS. Wherever possible, the innovations in place today will be maintained in future years; others will be added to enable the department to grow in cost-effective ways.

THE NEED FOR CHANGE

At the time of writing, during the *Master Plan* planning process, AFRS stands out as a full-service, composite fire department, in place to protect the health and safety of residents and others throughout the entire municipality. The department devotes considerable effort and resources to incident response — that is, to ensuring that its firefighters are trained, certified and available to react to a wide variety of emergencies across the City. Resources are directed, as well, to meet the department’s legal requirement to inspect buildings for compliance to the BC Fire Code. Community education and related proactive initiatives, by contrast, have received relatively little attention in the department in recent years.

The decision to focus attention on incident response and the fire inspection function is understandable in an environment of ever-increasing call volumes and fixed staffing levels. In the coming years, however, this service model will need to be refined. Changes will be needed to:

- increase the numbers of career and POC members in the department
- enhance significantly the department’s emphasis on incident prevention, through targeted community education programs and a new, risk-based compliance monitoring and fire safety inspection system
- direct the department’s response capabilities toward categories of incidents that, evidence show, are most prevalent in the community
- tailor the department’s response methods — type of apparatus, size of crew, response protocol — to match the needs associated with different types of incidents

These changes, and the service model they will help to create, are featured in the remaining sections of the *Master Plan*.



SECTION 4 GUIDING PRINCIPLES

In developing the recommended actions for the *Master Plan*, the Project Committee was guided by a number of principles. These principles, which will inform AFRS' efforts and activities in the coming years, are set out under the following headings:

Council's Priorities

- The design, evolution and implementation of AFRS' service model will be informed by, and will support, Council's strategic priorities, which are expressed as four cornerstones:
 - » Vibrant Economy
 - » Complete Community
 - » Fiscal Discipline
 - » Organizational Alignment

Health & Safety

- The physical and mental health of AFRS' firefighters and personnel are of paramount importance
- The health and safety of people in the community, including residents of Abbotsford and visitors to Abbotsford, is central to the mission of AFRS
- The protection of property and the natural environment from loss as a result of fire are important elements of the department's purpose

Prevention & Response

- Efforts to prevent fires and other types of incidents from occurring represent the department's first line of defence, and constitute an essential part of the AFRS service model
- Efforts to respond to incidents — the second line of defence, and an equally essential component of the service model — must be flexible, risk-based, effective, efficient, timely and appropriately-resourced

Composite Service

- AFRS is committed to a composite service model with a strong career core, supported by an effective POC contingent
- AFRS' career firefighters, represented by the Abbotsford Firefighters Association (Local 2864), constitute the primary contingent of personnel involved in incident prevention, incident response and training
- AFRS' POC firefighters are valued members whose training, and whose involvement in the department's prevention and response programs, will be supported and, where practicable, enhanced

Service Area

- AFRS provides service throughout the entire municipality, including areas within the Urban Development Boundary and outside of it
- The level of incident response, measured by proximity of career halls and response time, will be highest in the urban areas of the City, within the UDB.
- Service capacity within the UDB will grow in tandem with development; AFRS capacity will not precede development.

SECTION 5 PREVENTION OF INCIDENTS

Efforts aimed at preventing fires, medical emergencies and other incidents constitute AFRS' "first line of defence" in its mission to protect the health and safety of the community. In the coming years, AFRS will direct additional resources towards prevention initiatives, including the design and implementation of community safety education programs, the development of a new risk-based compliance monitoring and fire safety inspection system, and the introduction of new requirements for the installation of fire sprinklers in new single-family houses and duplexes.

The department knows, based on the experiences of fire departments elsewhere; Surrey, Greater Manchester, that investments in fire prevention reduce the total number of fires and other emergencies in a jurisdiction. The department knows, as well, that in cases where incidents still occur, investments in prevention help to minimize the overall level of incident severity. These returns on investment, expressed in terms of fewer and less severe incidents in the community, help in turn to:

- keep firefighters safe by reducing their exposure to potentially harmful situations
- improve the health and safety of residents
- minimize the economic loss in the municipality from fire
- protect the community's natural environment from damage

Recommended actions for the department to take in the coming years through the prevention function are outlined in the remainder of this section.

COMMUNITY SAFETY EDUCATION

Significant gains in public safety can be achieved through community education programs that help residents understand their roles and responsibilities in preventing fires and other incidents. A causal link between public education and increased community safety is well-established, and is recognized by departments across the broader fire service.

Fire departments recognize as well, however, that not all approaches to education are equally effective in achieving results. Programs that deliver general safety and prevention messages to broad audiences, for example, will not achieve meaningful reductions in the number and severity of incidents, or do much to change underlying behaviours. Conversely, community safety education programs that are targeted to specific groups, focused on particular concerns, and delivered at least in part by fire crews, will generate positive returns. Figure 5.1 speaks to these characteristics and others.



**Figure 5.1
Characteristics of Effective Education Programs**

DESCRIPTION	
Targeted to Populations	Effective programs target specific at-risk populations that are known, based on data, to be particularly susceptible to certain types of incidents. Populations may be identified by age, socio-economic status, ethnicity or specific public health issue, or they may be defined using other factors or combination of factors.
Neighbourhood-Based	Effective programs target neighbourhoods within the community that experience specific types of calls for service, or that are susceptible to different types of risk. Targeted areas can be identified using incident maps, and/or Census data. The areas may feature particular types of built structures, may correspond to different socio-economic findings, or may be defined using other factors.
Focused on Behaviours	Programs that work are those that identify and focus on modifying behaviours that lead to fires or medical incidents. In some cases, small changes to routines (e.g., cooking, navigating stairs, lifting heavy objects) will be sufficient to achieve results. In other cases, more significant lifestyle changes will be needed (e.g., smoking cessation, exercise and movement).
Developed with Public Health Partners	Fire departments understand fire — its forms, its behaviour and its causes. Fire departments have less understanding of different types of medical incidents and their causes. The number of medical emergencies in every community, however, vastly exceed the prevalence of fires and fire-related events. To reduce the number of medical emergencies, as well as the impact of such incidents on residents, fire departments need to work with staff from health authorities and other agencies to identify behavioural changes that can be incorporated into safety education programs.
Delivered by Firefighters	Effective programs are delivered using a variety of departmental personnel, POC firefighters and alumni, education professionals, and career firefighters. Career firefighters are particularly important to include in program delivery efforts. Career crews are respected, credible authority figures in the community. Their targeted messages, delivered in person to households, resonate with their intended audiences. Wherever possible, departments need also to involve public health staff in the delivery of programs.
Measured and Evaluated	Effective programs are evaluated to ensure that they are being delivered properly and consistently, and to confirm that they are meeting their intended objectives. Operational guidelines and key performance indicators (KPIs) are important to establish.

Underlying an effective community education function is an organizational culture that values such efforts. Many fire departments — AFRS is an example — do not yet have cultures in place that treat incident prevention and community education on par with emergency response. Firefighters have traditionally entered the profession to “fight fires”, not to deliver education programs. The role of firefighter, however, is evolving; the culture of departments must evolve with it.⁹

⁹ Greater Manchester Fire and Rescue Authority’s *Strategic Intent Document* (p 40) speaks to the need for evolution in the departments’ culture. “Some people believe that we have gone too far with safety, and emergency response operations should take precedence, especially when resources get more limited. Others believe that prevention is the most effective way of saving lives. Of course, the answer is we must strike a new balance, because both of these are equally important, and we have to find ways to balance our resources to do both, even when we have fewer resources. So, firefighters of the future must see themselves *both* as safety professionals, as well as fire and rescue professionals.” (Emphasis in original.) See manchesterfire.gov.uk

Community Safety Education Strategy

AFRS recognizes the importance of effective community safety education programs. To increase its capacity in program development and delivery, AFRS will hire a full-time Emergency and Safety Program Coordinator. The Coordinator, who will report to the Fire Chief, will be responsible for the development, and for overseeing the delivery, of an Abbotsford Fire and Rescue Community Safety Education Strategy.

The Strategy will feature a set of programs that will be developed based, primarily, on a review of AFRS incident data. These data, housed in the department's Fire DepartmentM database, provide both high-level and detailed information on the range of incidents, the prevalence of incidents, the timing and location of incidents, and the severity of incidents. The data show, for example, that:

- the majority of all incidents, under all incident types, occur within the service areas of Halls 1 and 6 during daytime hours
- medical incidents account for approximately half of all responses across the City, including in the service areas of the two busiest halls
- breathing problems and chest pains are the most prevalent medical incident types in Hall 1 and 6 service areas, followed by overdoses / poisonings
- the most prevalent types non-residential fires involve bark mulch and vehicles
- fires based in residences are most often cooking-related



These findings help to identify incident causes that can be addressed and minimized through education.

The department's own FDM database is the best source of information for program development. The information in this database, however, can be bolstered and enhanced by other sources, including:

- aggregate data on incidents, and studies on future challenges, produced by groups such as the Office of the Fire Commissioner (BC), National Fire Protection Association (NFPA), Office of the Fire Marshall (Ontario), US Fire Administration, and others
- population, demographic, socio-economic and other data provided in the 2016 Canada Census, customized based on geographic zones for the City of Abbotsford
- Abbotsford Fire Rescue's 2016 Community Risk Assessment
- studies and analyses produced by the University of the Fraser Valley's Centre for Public Safety and Criminal Justice Research, and other similar institutions

Figure 5.2 provides further information on the shape of the Strategy to be developed by the Program Coordinator.

Figure 5.2
Abbotsford Fire Rescue Service
Community Safety Education Strategy

DESCRIPTION	
Populations	<p>General fire and community safety will be made available to the broader community through the City's website and other means of communication. The bulk of the effort in creating the Education Strategy, however, will be directed toward developing programs that target specific at-risk populations in Abbotsford.</p> <p>Populations will be selected based on the review of AFRS incident data, supported where necessary by information from complementary sources.</p> <p>The Strategy will "start small" by designing a limited number of programs for a select number of population groups. Over time, in response to need, and based on AFRS capacity, the number and range of programs may grow.</p>
Neighbourhoods	<p>The number of target neighbourhoods will be limited, particularly during the initial implementation period. At-risk populations in individual neighbourhoods of Abbotsford's urban areas — City Centre, Historic Downtown, McCallum, Clearbrook, UDistrict, Immel-McMillan, Sumas Way — will be the focus of delivery.</p>
Behaviours	<p>In most cases, fire, medical and other incidents can be directly linked to specific behaviours. The behaviours behind the targeted incident types in Abbotsford will be identified. Programs will be designed to address and, where possible, modify these behaviours.</p>
Public Health	<p>Efforts will be made to collaborate with staff from Fraser Health, and with public health-related non-profit groups in Abbotsford, to identify causes of medical incidents, as well as behavioural changes to help prevent or lessen the severity of incidents. Public health professionals can also assist in delivering programs, and in training fire crews and others in program delivery.¹⁰</p>
Delivery	<p>AFRS career crews will be involved in direct program delivery in the targeted neighbourhoods. The package of recommended actions in this <i>Master Plan</i>, including those related to incident response efforts (see later), will help to provide the time required by crews to participate in program delivery. AFRS' POCs and AFRS alumni (career and POCs) will also be asked to participate.</p>
Evaluation	<p>The Program Coordinator will work with the Assistant Chief (Prevention) and Fire Chief to develop KPIs to evaluate the programs in the Strategy. KPIs will measure the number of persons reached by the department as a whole, and by individual crews. KPIs will also measure the amount of information or devices (e.g., smoke alarms) provided, the feedback of program recipients, and other items. Program results will be established through the correlation between program efforts and incident numbers can be recorded.</p>

¹⁰ The specific training given to fire crews will depend on the incidents and behaviours being targeted by a program. Consider the Merseyside Fire and Rescue Service (MFRS) in the UK. Fire crews from MFRS have been trained — and are supported — by Britain's National Health Service to provide advice and information to target populations on how to avoid a fall in the home, the benefits of quitting smoking, and the benefits of reducing alcohol consumption. Crews have also been trained to provide blood pressure checks, which they started offering in January, 2018. Undiagnosed high blood pressure has been identified as a priority in the area, linked to cardiac and other issues that result in emergency incidents.

There are many sources of program ideas to address the identified needs of target populations. Other departments (e.g., City of Surrey Fire Department) have programs in place that can be studied. Central fire agencies and associations (e.g., US Fire Administration, International Association of Fire Chiefs, NFPA, Office of Fire Commissioner, Local Government Association UK) have information on programs that are offered across North America and beyond. A range of sources will be canvassed for ideas.

One program that will be included in the AFRS Community Education Strategy is Home Safety Visits (HSV). This program will be modeled on similar programs in the City of Surrey¹¹, certain Ontario municipalities, and fire authorities (e.g., Merseyside Fire and Rescue Service) in the UK. In broad terms, the program will feature door-to-door visits in specific, targeted neighbourhoods by Abbotsford's career fire crews, supplemented by the department's active and alumni POCs. At each residence, fire personnel will:

- conduct a brief home safety inspection, pointing out potential fire hazards and corrective actions
- provide specific advice on behaviour changes to prevent kitchen and other targeted fire incidents
- provide information and advice — and in some cases intervention — to prevent or minimize targeted medical incidents (e.g., falls, breathing problems, cardiac issues, substance-related issues)
- check and, where necessary, replace (at no cost) smoke alarms
- provide emergency preparedness information

Operational guidelines will direct crews in their delivery efforts. KPIs will measure the number of visits performed, the number of individuals interacted with, types and amount of information provided, and impact (correlation) on fire, medical and other incidents.

RECOMMENDED ACTIONS

- AFRS will hire a full-time Emergency and Safety Program Coordinator (ESPC) who will report to the Fire Chief
- The ESPC will be responsible for developing a Community Safety Education Strategy, which will include programs that are targeted at specific incidents, populations, neighbourhoods in the City, and behaviours—a key program developed for the Strategy will be a Home Safety Visits program
 - » The ESPC will oversee the implementation of the Strategy, and the delivery of its programs
 - » Career crews will participate in program delivery, along with active POCs, AFRS career and POC alumni and, where possible, public health professionals
- The ESPC, in collaboration with the Assistant Chief (Prevention) will establish KPIs to measure the activity under, and impact of, the programs in the Strategy

¹¹ The program in the City of Surrey is called HomeSafe.

¹² The case for a compliance-risk inspection framework is the focus of a 2014 University of Fraser Valley study, Dynamic Risk-Based Framework for Redesigning the Scheduling of Fire Safety Inspections, by Garis and Clare. Such systems are in place in the United Kingdom.

COMPLIANCE MONITORING

The regular inspection of public buildings for compliance to the British Columbia Fire Code will remain an important — and mandated — function of AFRS. In the coming years, however, the department will change its approach to the function. Specifically, the department will:

- develop, recommend and put in place a new, risk-based compliance monitoring system that focuses AFRS' inspection resources on buildings that are shown to be both high-risk and low-compliance¹²
- make use of hand-held devices and technologies to conduct inspections

Inspection Program

The Fire Services Act, in force at the time of writing, requires Council to provide for a “regular system of inspection of hotels and public buildings” (s. 26(1)). Abbotsford’s current system, similar to that in most other municipalities, is based on the Interpretive Guide to the British Columbia Fire Services Act. This Guide categorizes public buildings by risk of fire hazard and magnitude of consequence into six different groups. Groups of buildings that are deemed high-risk (e.g., schools, apartments, care facilities) are subjected to more frequent inspections than are groups of buildings deemed lower-risk (e.g., offices, retail stores).

The Fire Services Act will be replaced by the Fire Safety Act once the necessary regulations for the new statute are in place.¹³

The new legislation will require Council to “implement a risk-based compliance monitoring system for public buildings” that is based on a “risk analysis conducted in accordance with the regulations”, and that “consists of fire safety inspections and fire safety assessments” (s. 20(1)). This new requirement will enable the City to change, in significant ways, how it enforces compliance to the Fire Code. Under the Fire Safety Act, for example, the City will be in a position to:

- create new categories of fire risk that take into account not only building type and permitted use, but also a range of static and dynamic risk factors such as construction material, building age, zoning density, geographic location, compliance history, ownership history, and others.¹⁴

- consider allowing — or requiring — owners of low-risk, high-compliance buildings to submit regular fire safety assessments in order to reduce the frequency of inspections.
- focus AFRS resources on efforts to monitor and enforce compliance of high-risk, low-compliance buildings.

In all, the new risk-based compliance monitoring system will have the potential to reduce the total number of inspections undertaken by AFRS each year.¹⁵ Fewer, more targeted inspections each year would help to address inspection workload issues faced every year by the department. The new system will also have the potential to reduce the impact on fire crews who currently assist with the more basic inspections in low-risk buildings. Such inspections under the new system would be required less frequently than at present, and thus would be lower in number on an annual basis. Crews would have additional time to direct to other important tasks, including the delivery of education programs, and training.

Technology

AFRS will provide handheld tablets to Inspectors and to fire crews for the purpose of conducting inspections.¹⁶ The tablets will eliminate the need for Inspectors and crews to manually enter information from paper forms into the department’s FDM database. This change will, in turn, pre-empt the need to hire additional administrative staff to assist with data entry.

Derelict Homes

Increasing land values have the potential, based on the experiences of other Lower Mainland municipalities, to result in an increase in the number vacant, dilapidated single family homes and duplexes in the City. These structures, which are left on sites that have been purchased for redevelopment, have the potential to become unsightly and to present fire hazards.

AFRS, working with other City of Abbotsford departments, will monitor the situation to determine if new regulatory powers and/or financial penalties are needed. Corrective actions deemed necessary will be developed based on best practices that are in place in other municipalities (e.g. City of Richmond).

¹³ The Fire Safety Act received Royal Assent in May, 2016, but will not be brought into force until the regulations are in place.

¹⁴ As explained in Dynamic Risk-Based Framework for Redesigning the Scheduling of Fire Safety Inspections (p. 10), static risk factors are those that are “non-changeable aspects of the property that influence fire likelihood”. Dynamic risk factors are factors “that have a demonstrated association with risk, but are amenable to alteration”.

¹⁵ An analysis of Surrey Fire Department data showed the potential of an eight percent reduction to the total number of inspections undertaken each year. This reduction could grow over time as a result of a targeted approach focused on addressing issues in low-compliance properties.

¹⁶ The department has the tablets in place and ready for use.



RECOMMENDED ACTIONS

- Using the authority in the Fire Safety Act, AFRS will develop and recommend to Council a new risk-based compliance monitoring system to focus the department's fire safety inspection efforts on high-risk, low-compliance buildings
- FRS will implement handheld tablets for all fire safety inspections
- FRS will monitor the issue of unsightly and hazardous vacant residential buildings, and work with other City departments as necessary to develop appropriate regulations and fees

RESIDENTIAL FIRE SPRINKLERS

The Canadian Association of Fire Chiefs (CAFC) is one of several groups across North America to advocate for building code changes that would require all new residential structures, including single- and two-family houses, to install residential fire sprinklers. As noted in an online CAFC background document (cafc.ca):

"The Canadian Association of Fire Chiefs supports changes to the National Building & Fire Codes to mandate that all new residential occupancies, including single family dwellings, require the installation of residential fire sprinklers."

The US Fire Administration is another proponent of residential sprinklers in all homes. In its Position Statement: Residential Fire Sprinklers (usfa.fema.gov), the organization states that "all homes should be equipped with both smoke alarms and residential fire sprinklers...".

New residential buildings and furnishings, it is recognized, burn faster and have greater combustible fire loads than older buildings. The evidence is compelling that residential sprinklers, where in place, significantly reduce the loss of life, the number and severity of injuries, and the amount of property damage in residential buildings that experience fire.¹⁷

Recommendations by British Columbia's 2015 Fire Sprinklers Working Group are expected to result in the development of regulations under the Building Act to enable all local governments to require residential fire sprinklers in new homes. Such regulations, it is anticipated, will be "opt-in" in nature, meaning that the decision to require residential sprinklers will be left to each municipal council. It is also expected that the regulations will refer to tiers of buildings that must be equipped with sprinklers. Each municipality will need to identify the specific tier, or tiers, to apply within its jurisdiction. Tier 1 will cover all buildings, including single- and two-family residential homes.

AFRS supports the development of provincial regulations, and the introduction of an Abbotsford bylaw, to require residential sprinklers in new single- and two-family buildings. AFRS recognizes, however, that an Abbotsford-based sprinkler initiative will need to be developed in consultation with developers, homebuilders and the community as a whole in order to fully understand and address concerns related to cost and other factors. AFRS will engage with these stakeholders on the matter via the Development Advisory Committee.

RECOMMENDED ACTIONS

- AFRS will consult developers, homebuilders and the community as a whole in designing and building support for a City of Abbotsford initiative to require the installation of residential fire sprinklers in all new residential occupancies, including single- and two-family homes

¹⁷ See, for example, the 2017 University of the Fraser Valley study by Garis, et al, titled "*Sprinkler Systems and Residential Structure Fires – Revisited*". See also the 2014 study of the US National Institute of Standards and Technology by Butry titled "*Economics of Residential Fire Sprinklers and the Potential Impact of Recent Code Changes*".

SECTION 6

PAID-ON-CALL FIREFIGHTERS

As outlined earlier in Section 3, there are four paid on call fire halls (Halls 3, 4, 5 and 7), one composite fire hall (Hall 6), and over 100 active POC members in AFRS today at the outset of the *Master Plan* period. Crews from these halls provide initial and back-up response to fire-related and medical calls across the entire municipality, including to neighbourhoods outside of and within the City's UDB. POCs also provide specialized firehose testing and repair services to the department as a whole, including to AFRS' three career halls. An additional role for the POC force relates to training. Instructors from within the POC ranks are used to deliver the full, extensive training program to new POC recruits.

AFRS and the City of Abbotsford are committed to a composite fire rescue service model that includes a strong POC contingent. The use of POCs, alongside and in support of the department's career firefighters, assists in making the service both effective and affordable for Abbotsford's taxpayers. Maintaining a sizable and engaged POC force, however, is not a simple undertaking. Fire departments everywhere are finding it increasingly difficult to recruit and retain POC members — AFRS is no exception to this trend. Departments and research agencies cite several reasons for this difficulty, including:

- an increase in training time required of new and existing POCs to become qualified, and to remain qualified
- an increase in call volumes, and a corresponding increase in expectations to attend calls or to provide back-up to career crews that are responding
- the significant increase in medical calls specifically, and the expectation that POC members will attend such calls
- changes in sociological conditions that have resulted in a decline in community attachment, community pride and a desire to “give back” through volunteering
- concerns about the mental and physical fitness levels required to do the job, as well as the mental and physical toll on individuals involved
- an culture across the broader fire service that is perceived as being unwelcoming to POCs
- a general decline in employer support for employees who serve the community as POCs
- an inability, often as a result of declining affordability, to live in rural parts of their host communities, in close proximity to the rural fire halls at which POCs tend to be based

These points and others represent barriers that all composite departments, including AFRS, must strive to overcome through the investment of new resources into the recruitment and retention of POCs.

RECRUITMENT AND RETENTION

The need for new approaches to POC recruitment and retention has been highlighted by the Canadian Association of Fire Chiefs, several Canadian provinces, the US Fire Administration, US National Volunteer Fire Council, and several others. Examples of best practices point to the importance of a recruitment and retention strategy. Figure 6.1 presents the components of a strategy for AFRS.

Figure 6.1
Abbotsford Fire Rescue Service
POC Recruitment and Retention Strategy

DESCRIPTION	
Understand Challenges	<p>The AFRS Strategy will be based on a clear understanding of the specific reasons why prospective POCs in Abbotsford are not showing interest in the department, as well as the reasons why existing POCs are choosing to leave the department.</p> <p>Interviews, surveys and a review of current literature on the topic will help to identify both sets of reasons. In some cases, reasons will be common to all composite fire departments; in other cases, reasons may be unique to AFRS. The department may be able to take steps to eliminate certain concerns that arise; other concerns may stand out as insurmountable barriers to recruitment and/or retention.</p>
Understand Motivating Factors	<p>The Strategy will be based on a clear understanding of the potential factors to draw prospective POCs to the department, and the factors to keep POCs in the department. The Strategy will recognize and take into account the two basic types of POCs in the service:</p> <ul style="list-style-type: none"> • those who join the department to obtain the experience and training required to become a career firefighter, either in AFRS or (more likely) another department • those who join to serve as POCs, without intention (or desire) to transition to career status <p>Persons who fall into the first category once accounted for about half of all new POCs and POC candidates in Abbotsford, but now represent the clear majority. These individuals are motivated primarily by the ability to acquire skills and certification, and the potential for exposure to a variety of incidents. Persons in the second category may be motivated by other factors, which may include a desire for camaraderie, a sense of pride in the community, additional income to supplement earnings from another job, or a combination of reasons. Through the Strategy, the department will identify and understand the motivating factors that apply to both groups.</p>
Target Populations	<p>The Strategy will identify and target different populations that may be interested in the POC experience. Post-secondary students at University of the Fraser Valley and in other institutions may be one population (strategies in other communities have targeted post-secondary students successfully). Other populations may be women and new Canadians, two groups that are underrepresented in AFRS and in the broader fire service. Some individuals in these groups will have both the ability and desire for POC work.</p> <p>Secondary students are another group to target, not for immediate recruitment, but for future entry post-graduation. Efforts to introduce high school students to elements of the work through training and orientation events can be effective at building interest.</p>
Choose Outreach Methods	<p>With input from the City's Communications & Marketing staff, the Strategy will identify the specific communications and outreach methods to use to effectively reach the target populations. Social media platforms (e.g., Snapchat, Instagram), for example, will be effective in connecting with secondary and post-secondary students. A AFRS website for targeting prospective and existing POCs is also necessary.</p>

Create Benefits and Incentives

The Strategy will explore and identify various benefits and incentives the department can consider in an effort to build and maintain the strength of the POC contingent. AFRS already provides fitness passes for City facilities, POC recognition events, firefighter training and wages. It may be both necessary and helpful, however, to offer additional benefits and incentives to appeal to the target populations. For example:

- subsidized rental housing, particularly near or attached to rural halls
- tuition assistance for post-secondary education or trades
- high school credits (for community volunteer time) to attend training nights

Some benefits could be targeted to employers to reward them for providing flexibility to employees who, as POCs, attend calls during work hours. The Strategy could examine the feasibility, for example, partial reimbursement to employers for time lost.

It will be important to examine benefit and incentive options in consultation with the City's Human Resources group and others.

Classes of Auxiliaries

The Recruitment and Retention Strategy, outlined here, is aimed at bolstering the core POC membership — that is, the individuals who both desire and are able to serve as POC firefighters. There may be others in the community who wish to serve in an auxiliary capacity, but who are not capable (or interested) in performing traditional POC firefighting duties. Seniors in Abbotsford are a case in point.

Under the AFRS' refined service model, the department will be placing new emphasis on incident prevention efforts, including community safety education. Seniors in Abbotsford constitute a strong target group of potential auxiliary recruits to assist in the delivery of education programs and events. The department will explore the potential of establishing a new class of auxiliary members assigned to prevention. If creation of the new class is feasible, efforts to recruit its members will be included in the Recruitment and Retention Strategy.

Transition to Career Status

As suggested earlier, AFRS has become attractive to prospective POCs who seek training and experience in order to qualify for career positions, most often in other municipalities. AFRS invests considerable resources — time, money, energy — in training these individuals, only to see them leave for other opportunities.

AFRS cannot require POC recruits to enter into long-term service agreements with the department; nor can it require (or expect) existing POCs who seek career status to forego opportunities that arise. AFRS can, however, commit to maximize the department's return on investment from these members during their time in the department. AFRS can also examine the feasibility of requiring POC's who leave before a certain period of service to reimburse the City for a portion of training and certification costs incurred. It is not uncommon for employers to require partial reimbursement of training, relocation and other expenses from employees who leave before specified periods of time.

Development of Strategy

It will be important for AFRS to develop its Recruitment and Retention Strategy with the involvement of active POC's and POC alumni, as well as the City's Human Resources and Communications & Marketing groups. Opportunities to collaborate with other nearby composite fire departments will also be explored. Finally, information and guidance will be obtained from the many fire service associations and research groups that have studied recruitment and retention challenges, and have developed recruitment and retention best practices.

Realistic Expectations

A well-crafted recruitment and retention strategy will help AFRS in its efforts to strengthen its POC numbers. It must be emphasized, however, that the challenges facing the department are significant. On the whole, prospective POC members are not attracted to the department in the same numbers, or for the same reasons, as in previous decades. In earlier times, many individuals were attracted to the service for reasons of camaraderie and fellowship, and for the opportunity to both enrich and “give back” to their communities. Most of the members who enter the service as POCs today view the job as an opportunity to get the training and experience needed to become a career firefighter in a municipal department. These members leave the POC ranks — and usually the community — as soon as opportunities for career status arise.

It is also worth noting that in earlier years, AFRS could count on POCs living in close proximity to the rural fire halls to which they were attached. This situation gave the department and the community some assurance with respect to timely incident response. Today, the presence of prospective or existing POCs in rural areas of the City is not at all a given.

A final illustration of the challenges facing AFRS concerns the department’s POC recruitment drives. In past years, AFRS initiated one recruitment drive each year to replenish its POC contingent. In both 2016 and 2017, two drives were needed.

These points are not meant to suggest that the development of a creative recruitment and retention strategy, complete with targeted enticements and outreach methods, is an exercise in futility. On the contrary, the experiences of other places with composite departments demonstrate that proper strategies work in helping to bolster POC ranks. The points set out here are meant simply to temper expectations in the department and at the City. The maintenance of a robust POC contingent in Abbotsford will require significant effort in the years ahead, and will be difficult.



RECOMMENDED ACTIONS

- AFRS will work with other City departments, as well as active POCs and POC alumni, to develop a POC Recruitment and Retention Strategy
 - » AFRS will explore opportunities to collaborate with other, nearby composite fire departments in developing the Strategy, and will seek guidance and materials from fire service associations that have developed best practices
- AFRS will explore the potential of establishing a new class of auxiliary members assigned to prevention
- AFRS will examine the feasibility of requiring POCs who leave before a certain period of service for a career position in another department to reimburse the City for a portion of training and certification costs incurred

SCHEDULED BACK-UP

AFRS time-of-day statistics, presented in Section 3 of the *Master Plan*, show that call volumes for the department consistently increase over the course of the day, then peak in the late afternoon before falling steadily through the evening and overnight periods. The heaviest period extends from 1400 hours to 1800 hours.

AFRS is committed to, and is successful at, providing a high level of response to all calls, including those that land during peak hours. Career crews, however, are taxed at these times, and often require back-up support from the department's POC's. POC's are paged en masse, as required, to provide the support needed. Given the time of day, however, adequate POC response is not always certain or available.

The package of service model changes outlined in the *Master Plan*, including increases in career staffing (see Section 7), will provide some relief to existing career crews, and make it easier for the department to maintain its high level of service. Implementation of all changes, however, will take time. During the implementation period, and with the concurrence of IAFF Local 2864, AFRS will seek to schedule POC's for back up response from 1400 hours to 1800 hours, Wednesday through Saturday each week. This initiative will be pursued as a temporary measure, to be implemented through a Letter of Understanding with IAFF Local 2864, for six-month terms, renewable by agreement.

This initiative, it is expected, will help to prevent burnout on the part of career firefighters during the *Master Plan* implementation period, and will provide on-shift crews and the department as a whole with guaranteed POC response. The initiative will also give interested POC's an opportunity to gain additional experience.

RECOMMENDED ACTIONS

- With the concurrence of IAFF Local 2864, and under terms set out in a Letter of Understanding, AFRS will schedule POC members, for six-month renewable terms, to provide back-up response from 1400 hours to 1800 hours, Wednesday through Saturday each week



SECTION 7 INCIDENT RESPONSE

The increased emphasis on incident prevention in AFRS' new service model is designed to reduce the number and level of severity of incidents in the community. Efforts aimed at prevention, however, will never eliminate or even significantly reduce total call volumes and the need within the department for a robust response capacity. Incident response, therefore, remains an important focus of the department's resources.

To meet the demands and expectations of Abbotsford's growing population, additional career firefighters will ultimately be required. More staff, however, will make up only a part of the solution. In the coming years under this *Master Plan* the department will assess its overall approach to incident response. The department will examine, for example, the range of incident types for which crews train, and to which they respond, based on an assessment of risk and call data in the community. AFRS will also introduce a new response protocol for calls that are triggered by automatic fire alarms. Two-person rescue crews will be introduced to respond to medical incidents (and others) that do not require response by full engine companies. Service levels in the New Neighbourhoods will be increased, but gradually and only in tandem with development in the McKee Neighbourhood Planning Area. Predictive technology, introduced in collaboration with the department's dispatch provider, EComm 911, will reposition AFRS apparatus as necessary to ensure adequate service levels, and to optimize response times.

This section of the *Master Plan* explores each of these initiatives in greater detail.

INCIDENT TYPES

AFRS trains and equips its fire crews to respond to a range of incident types in the community, including:

- fires and fire-related events
- medical incidents, including overdoses and poisonings
- motor vehicle incidents
- public service and public hazard incidents¹⁸

The department also provides specialized response to incidents involving hazardous materials (Hazmat), and to those that require confined space rescue and technical high angle rescue. Specialized response is not provided, however, for water rescues.



¹⁸ "Public service" calls include responses to investigate smoke or lights (no fire), calls to investigate hazards and possible risks to safety, and calls to assist people in distress. "Public hazard" calls include responses to fallen power lines, damaged utility poles or kiosks.

The commitment of AFRS to provide specialized response is significant in terms of training time and training-related costs, including opportunity costs.¹⁹ All crews must be trained to an operational level; crews in Halls 2 and 8 receive more extensive training in certain specialized disciplines. The department's commitment is defensible in the case of Hazmat response, given that the department attends on average over 100 Hazmat calls per year (and has done so since the beginning of 2011). The commitment is less defensible in the case of confined space and high angle rescue, calls for which are extremely rare and infrequent.²⁰

Confined space rescue is particularly difficult to justify, given that employers with crews who work in confined space situations already provide, as per WorkSafe BC requirements, their own on-site, trained personnel to monitor safety and execute rescue, if required.²¹ In view of this situation, AFRS will give notice to industry groups and others of its intent to end its confined space service. The service will only be terminated following an appropriate period of notice.

In a growing City with substantial urban development and unique challenges in rural areas, the department is loath to recommend the elimination of its technical high angle rescue capacity and its specialized Hazmat response. AFRS feels, as well, that there is a need to add to these two services a specialized water rescue service, the demand for which is

clear.²² Abbotsford is a community that is situated on the Fraser River, and that is home to several creeks, lakes, and floodplain areas. AFRS, as the community's own first responder rescue service, needs to be capable of responding to water emergencies.

In the case of these three specialized functions — Hazmat response, technical high angle rescue, and water rescue — there may be an opportunity to recover a portion of the City's service costs from the neighbouring municipalities of Chilliwack, Mission and Langley Township, none of which currently offers the services itself. The very presence of the specialized capacities at AFRS benefits not only residents and businesses in Abbotsford, but also residents and businesses in these other communities.

AFRS, with the guidance and involvement of Council and the City Manager's Office, will pursue the development of equitable cost-sharing arrangements for these three specialized services with neighbouring jurisdictions and their fire departments. Such agreements will include a portion of the base cost to the City simply to have the services available, plus a per-call charge. The per-call rate will take into account the costs incurred by the department to provide back-up response during call-outs to specialized events outside of Abbotsford.

RECOMMENDED ACTIONS

- AFRS will give notice to industry groups and others of its intent to terminate its confined space rescue service
- AFRS will develop a specialized water rescue service, and will retain its technical high angle rescue and specialized Hazmat response services
- AFRS will pursue equitable cost-sharing agreements with neighbouring jurisdictions for the provision of specialized Hazmat response, technical high angle rescue, and water rescue services

¹⁹ Training for specialized services often requires members to be off-shift in order to ensure that training is not interrupted by service calls. Off-shift training for most members must be compensated at overtime rates. Aside from wages, training for specialized services displaces other training opportunities, as well as opportunities for firefighters to attend to other important duties, such as community education.

²⁰ From January, 2011, to March, 2018, AFRS responded to a total of two (2) confined space rescues and three (3) technical high angle rescues.

²¹ At most, AFRS is relied on to provide back-up rescue capacity on low-risk projects.

²² AFRS incident figures do not provide accurate data on the number or frequency of incidents that involve rescue on water or ice, simply because crews are not trained to provide such response. Members of the Project Committee report, anecdotally, that such incidents average 20 per year.



UNWANTED ALARMS

For the purpose of this *Master Plan*, the term “unwanted alarms” refers to calls for emergency response that are triggered by automatic fire alarm systems, during alarm testing, as unintentional activations or as system malfunctions, in cases where there is no emergency.²³ This definition of unwanted alarms corresponds to the definition for “false alarms” in the City of Abbotsford Fire Service Bylaw, 2006.

Across North America, unwanted alarms have increased significantly in number and frequency over the same period during which calls to actual fires have fallen by more than half. Unwanted alarms occupy crews who must respond to the calls as fires. These crews are unavailable to respond to emergencies that arise, and are also unavailable for training, community fire safety education, fire safety inspections, and other important duties. Travel to unwanted alarm calls unnecessarily exposes crews and the public to risk of motor vehicle accidents, adds to vehicle wear-and-tear, and cost taxpayers money.

Fire departments have traditionally tried to manage the issue of unwanted alarms using systems of graduated fees. In most municipalities, building owners receive one unwanted alarm response each twelve-month period at no charge. Additional responses in the same period result in escalating fines — over \$1,000 in many places. A growing number of departments are moving beyond fees to deny or limit service to alarm calls, in particular to calls from non-residential properties. Some departments (e.g., Tualatin Valley, Oregon; Las Vegas, Nevada) require alarm companies to verify that response is needed to automatic non-residential alarm calls. Where verification is not provided, departments may respond with minimum force (e.g., Tualatin Valley), or may not respond at all (e.g., Las Vegas).

In 2012, Merseyside Fire and Rescue (Greater Liverpool, UK) implemented a new, two-phase response program for

unwanted alarms. Under phase one, the department announced that it would no longer respond to automatic alarm calls between the hours of 07:30 and 19:30 on all days, unless a back-up emergency (E911) call was received to confirm that there is an emergency. Under phase two, implemented one year later, response to unverified non-residential automatic alarm calls was cancelled for all hours of the day. Merseyside’s response protocol, similar to those of the US departments noted, was developed based on a community risk assessment which found, among other items, that the vast majority of valid automatic alarm calls — that is, calls that indicated accurately the presence of an emergency — were verified by a follow-up E911 call.

Departments that have revised their response protocols to limit or eliminate emergency response to unverified non-residential alarm calls have achieved reductions — often significant reductions — in unwanted call volumes.

City of Abbotsford

Unwanted alarms represent the third single largest category of incidents to which AFRS responds, after medical calls and motor vehicle incidents. Since January, 2011, the department has attended almost 6,500 unwanted alarm calls — an average of more than 900 per year, and almost twice the number of actual fire calls.

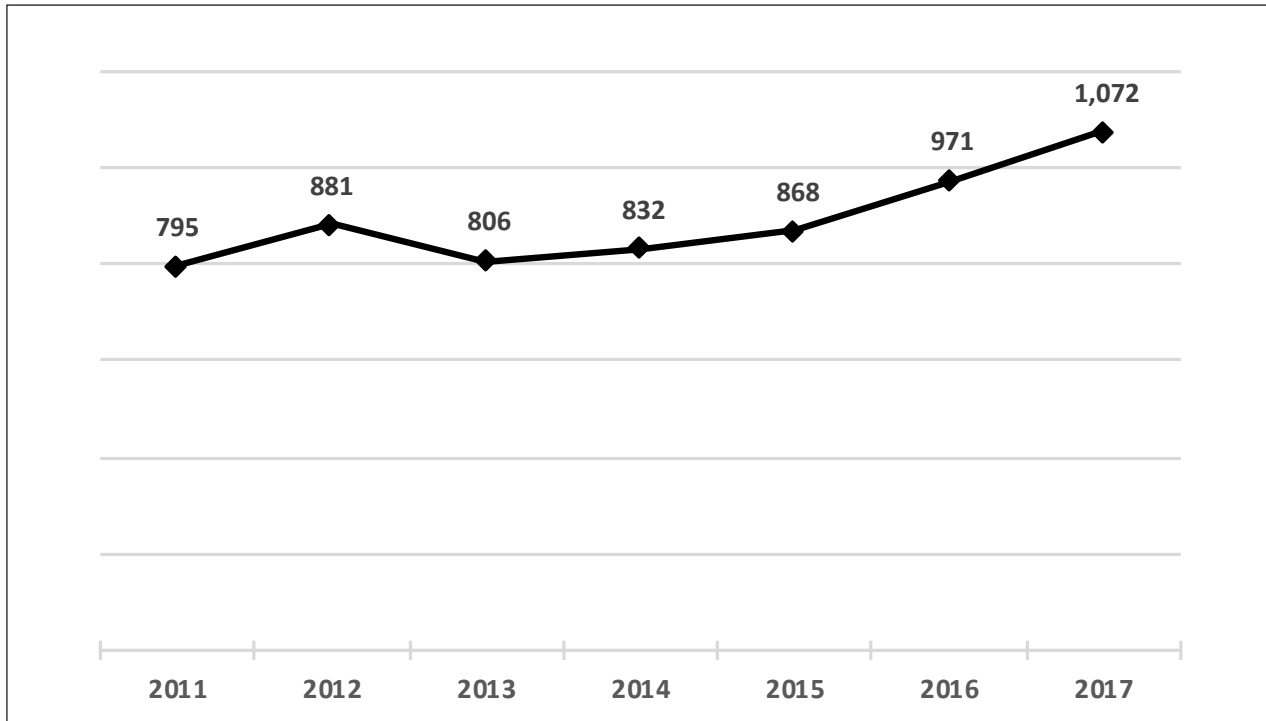
AFRS has in place a graduated system of fees that begins at \$150 for the second false alarm at a non-residential premises, and climbs to \$1,200 for the fifth and each subsequent false alarm at the same property. This fee schedule, which was introduced in 2013, may have provided a short-term reduction in total calls, and may (or may not) have helped to reduce the rate of increase in unwanted alarm calls. It has not succeeded, however, in bringing down the absolute number of such calls over the longer term. Figure 7.1 presents the data on unwanted alarm calls since 2011.²⁴ Approximately two-thirds of the calls in each year are to non-residential properties; most of the remaining calls are to multi-family buildings.



²³ This working definition is taken from the 2013 study by the Fire Protection Research Foundation, titled Development of a Risk-Based Decision Support Tool to Assist Fire Departments in Managing Unwanted Alarms.

²⁴ Most of the data presented in the Master Plan are shown using a five year period, from 2013 to 2017. Figure 7.1 shows seven years, beginning 2011, in order to demonstrate the impact of the graduated fee implementation in 2013.

Figure 7.1
AFRS Unwanted Alarms



In an effort to reduce the number of unwanted alarm calls each year, AFRS will develop a new response protocol for all non-residential alarm calls. The protocol will be developed based on a risk-assessment, implemented in phases, and informed by the results of consultation with non-residential property owners and the department's dispatch provider (EComm 911). Based on the approaches being adopted elsewhere, it is anticipated that the protocol may be similar to the following:

- AFRS will respond to all residential alarm calls, as at present, using a single engine
- AFRS will respond using its existing response protocol to all non-residential alarm calls during evening and overnight hours (over time, this response may be reduced or eliminated)
- AFRS will limit or eliminate response to non-residential alarm calls during daytime hours (e.g., from 0800 hours to 1800 hours) in cases where an E911 back-up call is not received to verify the presence of an emergency (over time, the time period of limited- or non-response may be extended)

RECOMMENDED ACTIONS

- AFRS will develop a new unwanted alarms response protocol for non-residential alarm calls
- The protocol will be based on a risk-assessment, implemented in phases, and informed by the results of consultation with non-residential property owners and the department's dispatch provider (EComm 911)

TWO-PERSON RESCUE TRUCKS

Medical incidents represent the largest single category of calls attended by the department. At Fire Halls 1 and 6, AFRS' two busiest stations, calls for medical assistance account for approximately 50% all calls to both stations. These two halls, taken together, account for about 75% of all medical calls in the department.

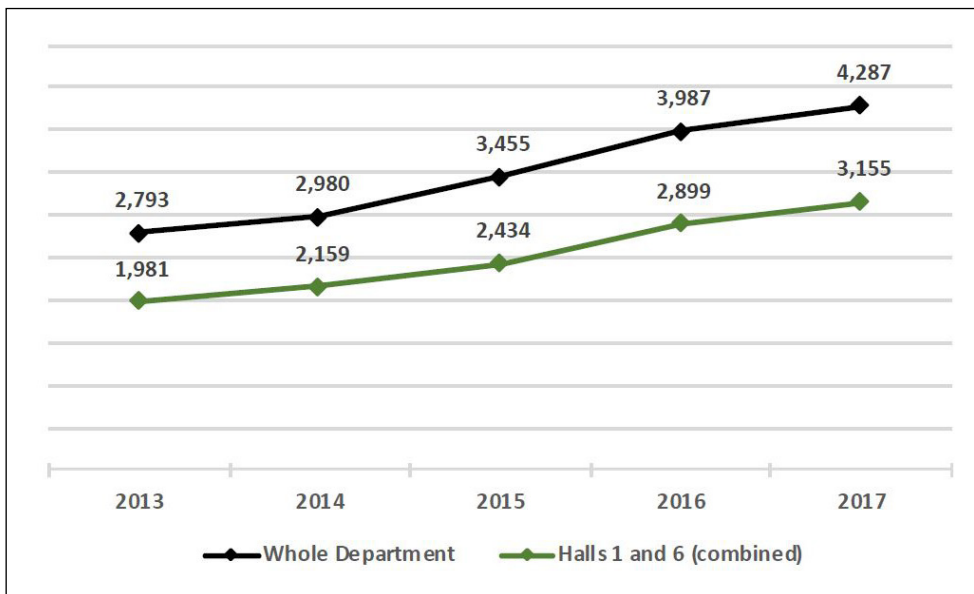
Figure 7.2 charts the increase in medical call numbers for the department as a whole, and for Halls 1 and 6 (combined), over the past five years. As illustrated, the numbers have risen consistently and considerably every year — the average annual jump for the department as a whole is 11.4%, and 12.4% for Halls 1 and 6. This trend, which is expected to continue in the years ahead, suggests that medical calls will remain predominant in the department, and in Halls 1 and 6, for some time.

Responses to all calls in the department are performed using four-person engines. Four-person engine response is important for fires and certain other types of incidents. For the vast majority of medical calls, however, the use of four-person apparatus represents an unnecessary use of staff and equipment. For these calls, a two-person crew on a rescue truck would be adequate and cost-effective.

AFRS will introduce to each of Halls 1 and 6 a two-person crew and rescue vehicle to respond to medical calls and other incidents (e.g., automatic fire alarms that are not verified by an E911 call) that do not require a four-person engine response. The new crews will both supplement and complement, rather than replace, the existing four-person engine crews at the halls. The initiative will:

- assist in maintaining the high (and increasing) call volumes in the Hall 1 and 6 response areas, which include the key urban areas of the City such as City Centre, Clearbrook, Historic Downtown, McCallum and UDistrict
- help to protect existing Hall 1 and 6 crews from burnout
- make available existing personnel in the two halls to perform other duties, including Home Safety Visits, inspections, pre-incident plans, and training

Figure 7.2
Medical Assistance Calls



The positive impact of the two-person crew initiative in freeing existing personnel to perform other duties is significant. AFRS' future service model, outlined in this *Master Plan*, highlights the need for a dual emphasis on incident prevention and incident response — put differently, a dual emphasis on both proactive and reactive efforts. Firefighters in the new service model will be expected to embody this dual emphasis. They will be directly involved not only in responding to incidents, but also in delivering programs, performing inspections and attending to other tasks that are aimed at preventing incidents. The addition of two-person crews to handle a substantial portion of the department's medical calls will help to free-up crews for proactive duties.

The new two-person crews will be scheduled using the two-platoon system in order to comply with the *Fire Department Act*, and to provide additional core capacity at all hours, including times that fall outside of the highest call volume periods. Full staffing of the new crews, however, will take time to achieve (each of the rescue vehicles will ultimately require a staffing of ten firefighters). AFRS will build the crews using existing staff, where possible, and by hiring new firefighters, as necessary. In the build-up period, the department will not be able to run, simultaneously, a four-person engine and two-person rescue vehicle from the two halls at all times. Response using the two-person rescue vehicles will be possible, however, on many shifts.

RECOMMENDED ACTIONS

- AFRS will introduce a full-time, 24/7 two-person crew and rescue vehicle to each of Halls 1 and 6 to assist in responding to medical and other incidents that do not require four-person engine response
- AFRS will build the new two-person crews using existing staff, where possible, and by hiring new firefighters as necessary

STATION LOCATIONS

In 2017, AFRS commissioned Dark Horse Emergency Services to undertake a Station Location Review for the department.²⁵ The review was commissioned to help determine the future needs of AFRS, and to identify and assess options for future station development. The review was undertaken in advance of the *Master Plan* to help set the stage for, and to inform the Plan.

New Neighbourhoods

A key finding of the Dark Horse assessment was the need, in the coming years, for an additional full-time fire hall in Northeast Abbotsford to serve the New Neighbourhoods (see Figure 7.3). Development in the area is not expected to begin in earnest until at least 2023. When it does begin, it will proceed in response to market demand over the next three decades.

As development occurs, AFRS will explore the station development and location options for optimizing service in the area. One option will be to build a new, additional hall (Hall 9) in the Auguston neighbourhood. Another option will involve converting the existing POC Hall 7 to a composite station, and relocating the building to a higher elevation in the New Neighbourhoods.

Regardless of the option chosen, full-time career staffing for the area will increase gradually, beginning with a two-person crew, in tandem with development in the area. Initial response to events will be performed by the two-person crew, with support from the department's POCs, and career crews from other halls.

Urban Core

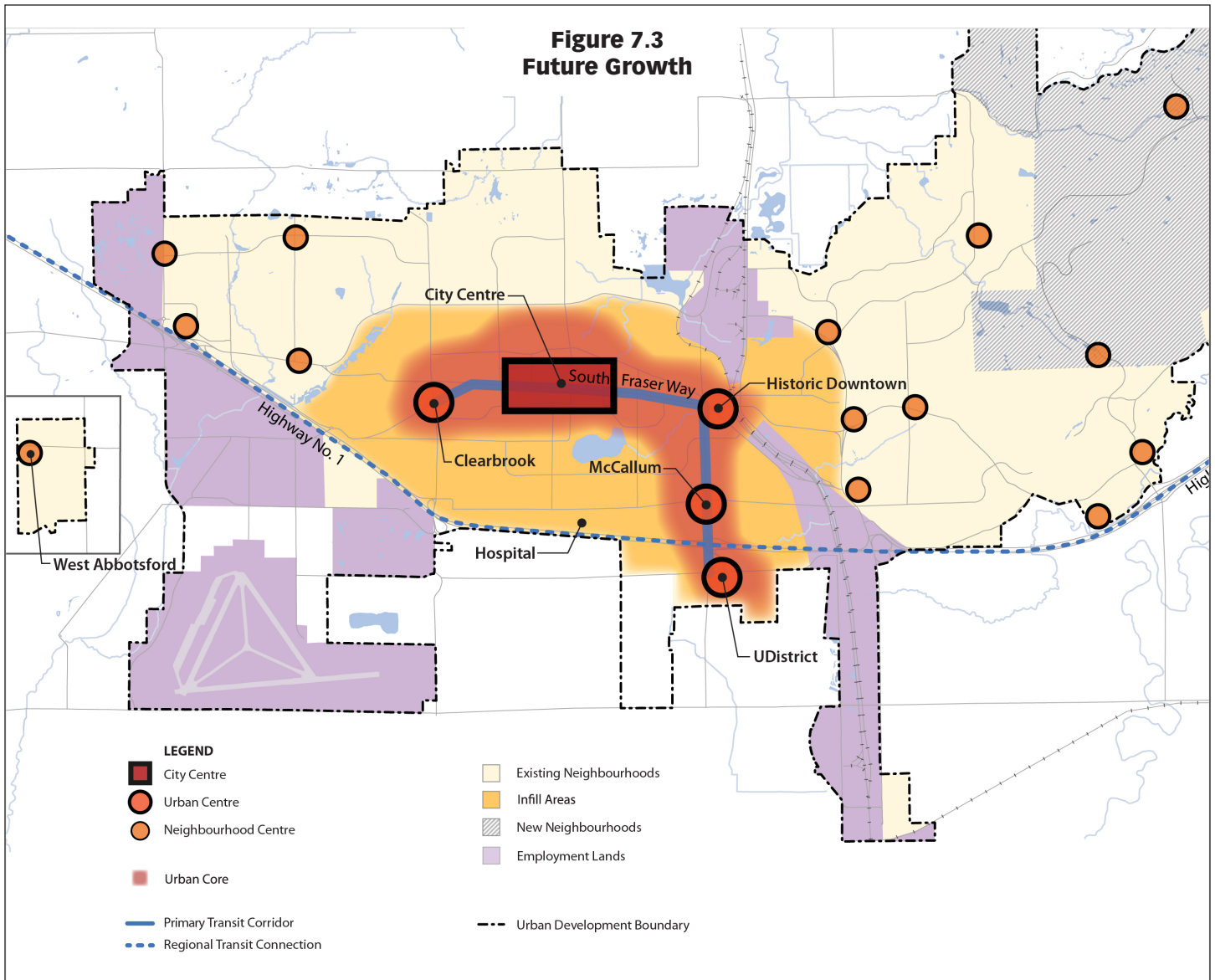
The Dark Horse study examined the need for additional station capacity in the Urban Core, specifically in the Historic Downtown / McCallum and UDistrict areas in the eastern part of the core. Based on the analysis, AFRS will be able to meet service demand by re-locating the existing Hall 6. The relocation, coupled with the addition of a two-person rescue vehicle capacity, and the introduction (see below) of MUM technology, will enable the department to maintain its existing urban response-time target in the eastern core.

West Abbotsford

Finally, the assessment considered the possibility of a new full-time hall in West Abbotsford, near the border with Langley Township. The review concluded, however, that the need for service in the western part of the municipality could be addressed through an automatic aid agreement with Langley, similar to that which is in place with the City of Chilliwack for parts of East Abbotsford. To that end, AFRS will pursue the development of an agreement with Langley Fire Department.

²⁵ The Station Location Review is included in Appendix III of the Master Plan.

**Figure 7.3
Future Growth**



RECOMMENDED ACTIONS

- AFRS will provide full-time career staff in a new fire hall (Hall 9) or a re-located existing hall (Hall 7) to serve the New Neighbourhoods beginning in 2023 or later, depending on the pace of development in the area
 - » AFRS will provide, initially, a two-person full-time crew, supported by POCs and career crews from other halls
- AFRS will re-locate Hall 6 to assist the department in achieving its urban response-time target in the within the eastern section of the Urban Core
- AFRS will pursue automatic aid with the Township of Langley to serve portions of West Abbotsford

LIVE MOVE-UP-MODULE

Live move-up-module — LiveMUM — is a predictive technology employed by fire dispatch to identify, in real time, gaps in response coverage based on each unit's status, location and incident assignment. Fire dispatch can use the technology to re-locate units across the service area to fill gaps and optimize response times to incidents that are predicted to occur.

AFRS acquired LiveMUM in 2015 for implementation through FVRD fire dispatch. Challenges encountered during roll-out of the system, however, precluded its use. In 2019, AFRS will start to receive dispatch service from EComm 911. At that point, the department will be in a position to make use of LiveMUM.

RECOMMENDED ACTIONS

- AFRS will work with EComm 911 to implement LiveMUM technology



SECTION 8 FIREFIGHTER HEALTH AND SAFETY

The City of Abbotsford places a high premium on the health and safety of all of its employees. The City holds a Certificate of Recognition (COR) from WorkSafe BC — an award that is given to employers who implement targeted policies and procedures to minimize the number and value of workplace injury claims. Through its efforts under the COR program, the City has improved awareness of workplace health and safety, has helped to reduce incidents of employee injury, and has achieved significant annual savings in WorkSafe BC premiums and penalty charges.

Maintaining COR status is not without cost. Managers and staff in departments with a high potential for injury must spend considerable time on injury prevention and documentation. In AFRS, it is estimated that the Assistant Fire Chief responsible for WorkSafe BC matters in the department spends 50% to 60% of his time on documentation, investigation, training, and follow-up associated with workplace injuries, including minor ones.

This level of commitment by the department is an important part of the City's overall work to maintain its COR designation. The commitment also speaks, however, to the department's own focus on the health and safety of its firefighters, including its career and POC contingents. Put simply, protecting the health and safety of firefighters is of paramount importance to AFRS, and to the fire service in general.

In past years, discussions on health and safety across the fire service focused primarily on the physical health and physical safety of members, and the steps that fire departments could take to protect their firefighters from physical harm. Strong regulations, protocols, procedures and training programs emerged out of these discussions. More recently, discussions related to the mental health and safety of members have become equally important. Efforts that departments can take to keep firefighters mentally resilient in the face of unique workplace challenges are now the focus of considerable attention.

This section of the *Master Plan* reviews both physical and mental health and safety initiatives for firefighters in Abbotsford. Recommended actions for the department to pursue are presented.

PHYSICAL HEALTH AND SAFETY

The physical health and safety of firefighters is protected and promoted by a well-developed framework of legislation, guidelines and best practices. The provincial government, fire service associations, and AFRS itself contribute to the framework.

Provincial

At the provincial level, regulations and associated policies and guidelines are administered by WorkSafe BC under the Workers Compensation Act. Key regulations include:

- Occupational Health and Safety Regulation — This regulation protects all workers in British Columbia from work-related risks to health, safety and well-being. Sections of the regulation focus on firefighters specifically.
- Firefighters' Occupational Disease Regulation — This regulation identifies diseases, for the purpose of compensation, that affect firefighters more than workers in other professions.

Fire Service Associations

Fire service associations set out health and safety guidelines and best practices that target working conditions, but also fire prevention and suppression. The National Fire Protection Association (NFPA) has developed many standards to guide departments. Groups such as the Canadian Association of Fire Chiefs, the US Fire Administration and others have also developed materials and positions on various issues (e.g., residential fire sprinklers as tools to protect firefighters).

One foundational guideline published by the NFPA is NFPA 1500: Standard on Fire Department Occupational Safety, Health and Wellness Program. The requirements in this document deal with the use of personal protective equipment, medical and physical requirements, exposure to fireground toxic contaminants, and other items. NFPA 1500 is endorsed across the fire service, including by AFRS.

Abbotsford Fire Rescue Service

AFRS has in place an extensive Operational Guideline Manual comprised of a broad range of standardized operational policies, procedures, references and regulations that, taken together, promote the effective and efficient operation of the department. Several of the individual operational guidelines (OG's) deal with the physical health and safety of members, and make reference to sections of the Workers Compensation Act, the Occupational Health and Safety Regulation, other provincial statutes, and the NFPA 1500 standard. Figure 8.1 lists some of the key physical health and safety subject areas addressed in the OG's.²⁶

Figure 8.1
Selection of Physical Health and Safety Operational Guidelines (OG's)

OG	TITLE	DESCRIPTION
1.01.01	Occupational Health and Safety Program	OH&S Program promotes healthy, respectful, safe workplace
1.01.02	Reporting of WorkSafe – Injury / Illness / Industrial	deals with reporting of injuries or exposure to industrial disease
1.01.04.01	New Employee Health & Safety Orientation Checklist	requires all new employees to complete orientation on health and safety
1.01.05	Fall Protection Plan – Training	ensures firefighter safety in situations where potential fall hazard
1.01.06	WHMIS Program	makes members aware of Workplace Hazardous Materials Information System, and steps for handling materials
1.01.07	Monitoring of Workplace Exposures	ensures that members document exposure to toxic substances
1.01.11.01	Occupational Health and Safety Committee Meeting	ensures monthly meetings of committee to address all issues
1.01.15	Hearing Tests	provides for annual hearing tests for early detection of hearing loss
1.01.16	Hepatitis A and B Immunization	provides for immunization for members who may be exposed through work
1.01.17	Needle Disposal	sets out safe system for disposing of needles
1.02	Personal Protective Equipment	addresses use and care of PPE
1.02.10	Eye Protection	deals with wearing of eye protection whenever risk of contamination or injury

²⁶ Not included in Figure 8.1 are the many OG's that guide the training of members for different types of incidents. These other OG's have physical health and safety elements as well.

1.02.20	Use of Traffic Vests	concerns wearing of traffic vests
1.03	Respiratory Protection Program	sets out training in use, limitation, maintenance and regulation related to self-contained breathing apparatus (SCBA)
1.03.01	Fit Testing	provides for annual testing of mask fit for persons who use respiratory protection
	SCBA Operations	sets out operational procedures for SCBA
1.03.05	Integrated Personal Alert Safety Systems	addresses use of Integrated PASS to prevent distress
1.03.09	Potential Asbestos Exposures	ensures consistent and safe response to incidents of potential asbestos exposure
1.04.02	Incident Rehabilitation	<ul style="list-style-type: none"> • establishes policy, procedures and protocols for rehabilitation (rest) areas at events • sets criteria for returning to incident
1.05.02	Workplace Violence Prevention	sets criteria for returning to incident
1.05.03	Electrical Safety	program to prevent and defuse violence at incidents
1.05.04	Personnel / Members Risk	establishes safe practices for firefighters at events that involve electrical infrastructure
1.05.05	Infection Control Procedures	<ul style="list-style-type: none"> • guidelines for protection against exposure to and spreading of communicable disease • procedures in event of exposure
1.06.03	Vehicle Emergency Response Safety	addresses safe operation of vehicles when responding in emergency mode to incident
5.22	Wellness Fitness Initiative	promotes physical and mental wellness
5.22.01	Fitness Assessments	requires annual fitness assessment, conducted by peers, on aerobic capacity, body composition, muscular strength, endurance, flexibility

AFRS' commitment to physical health and safety is also demonstrated by its program of annual medical exams given to all members. Every firefighter receives an annual medical exam with a doctor to check a variety of health indicators against baseline measures. These exams are administered separately from, and in addition to, the peer Fitness Assessments set out in OG 5.22.01 (see Figure 8.1).

Focus Issues

All matters related to the physical health and safety of Abbotsford's firefighters are important — the department will continue to promote a broad range of efforts to protect its members from harm. Certain physical health and safety matters, however, may require special attention in the coming years. One such issue is the risk of cancer.

The University of the Fraser Valley, in conjunction with the British Columbia Injury Research and Prevention Unit, published in 2018 a review of ten years' worth of firefighter health and injury data. The study, titled *Determinants of Injury and Death in Canadian Firefighters: A Case for a National Firefighter Wellness Surveillance System*, identified cancer as the top cause of firefighter fatalities in Canada, responsible for more than 86% of all deaths.²⁷ Most deaths occur later in life, beyond age 65, but are linked to regular exposure over the course of firefighters' careers to concentrated carcinogens in the air, soot and tar at firegrounds.

The NFPA has also identified cancer as an "increasing concern in the fire service".²⁸ The NFPA's Fire Protection Research Foundation has initiatives underway to address firefighter exposure to contaminants on the fireground and in other arenas. The Association recommends, as well, that department's consult *Healthy In, Healthy Out: Best Practices for Reducing Risk of Exposures to Carcinogens*, put out by the State of Washington, Department of Labor & Industries.²⁹

FRS recognizes the risk of cancer as an issue in the fire service. The department's program of annual medical exams has been successful as an early detection measure in past years. This program will be continued in future years; new programs, based on best practices elsewhere, will be added.

A second focus issue is the introduction of residential fire sprinklers, which was addressed earlier in Section 5. Initiatives to introduce sprinklers in all residential buildings, including single- and two-family houses, will help to eliminate fires from occurring. Where fires do occur, sprinklers will help to keep them contained to room of origin. The result in both cases will be a reduction in the potential exposure of firefighters to dangerous contaminants.

RECOMMENDED ACTIONS

- AFRS will develop and/or update Operational Guidelines, as required, to protect the physical health and safety of its members
- AFRS will continue to conduct annual medical exams of its firefighters
- AFRS will review recommendations and best practices, from NFPA, Washington State and other agencies, aimed at reducing the exposure of firefighters to carcinogens

²⁷ Ramsden, et al., *Determinants of Injury and Death in Canadian Firefighters: A Case for a National Firefighter Wellness Surveillance System*, University of the Fraser Valley, February, 2018. The study found identified the top five health concerns facing Canadian firefighters as cancer, traumatic injury, cardiovascular disease, respiratory disease and mental health problems

²⁸ See NFPA's Fact Sheet: *Cancer Risk in Firefighting*.

²⁹ See wscff.org.

MENTAL HEALTH AND SAFETY

The mental health and safety of firefighters is a significant and growing issue across the fire service. It has become widely acknowledged that the work undertaken by firefighters takes a heavy toll on the individuals who put themselves forward to serve. Firefighters in modern, urban departments perform a wide range of front-line services, face ever-increasing workloads, and are frequently exposed to traumatic fire, medical, MVI and other types of events. The use of firefighters as first responders to fentanyl poisoning incidents — a relatively new phenomenon — highlights both the scope and disturbing nature of the challenges facing crews today.

Abbotsford Fire Rescue Service

AFRS has demonstrated leadership in recognizing the importance of mental health and safety, and in developing guidelines and programs aimed at protecting its members. The department has a well-developed Critical Incident Stress Management (CISM) / Peer Support Program, headed by a CISM Team, and guided by a set of operational guidelines, including:

- OG 5.01.05.01 — CISM Program
- OG 5.01.05.02 — CISM Team



- OG 5.01.05.03 — CISM Team Ethical Statement
- OG 5.01.05.05 — CISM Training and Familiarization
- OG 5.01.05.06 — CISM / Peer Support Defusing Debriefing
- OG 5.01.05.07 — CISM Referrals
- OG 5.01.05.08 — CISM Notification of Serious Injury or Line of Duty Death
- OG 5.01.05.09 — CISM Forms
- OG 5.01.05.10 — Line of Duty Death / Serious Injury

The program recognizes “the harmful effects of stress caused by disasters, mass casualties, and other critical incidents.” It uses the peer support model to ensure that intervention occurs where necessary to address mental health concerns caused by stress.

AFRS also trains members to act as instructors of “Resilient Minds”, a program developed by the Canadian Mental Health Association (Vancouver Fraser Branch) and Vancouver Fire and Rescue Service. Resilient Minds educates firefighters about:

- the most common types of mental health issues that affect first responders, including PTSD, depression, anxiety and substance use disorder

- the signs and symptoms of mental health concerns, including the risk of suicide
- preventative measures that are effective at supporting mental health in the workplace
- stress-related risk factors, and stress-reducing activities and practices
- self-care and positive coping strategies
- ways to support peers with mental health conditions
- practical language and behaviours to reduce mental health stigma
- the availability of mental health resources for employees

Members received the training to deliver the program across the department.

AFRS, at the outset of the *Master Plan* period, is piloting a “Baseline Mental Health Assessment project for all members in the department. This project adds a one-on-one assessment with a mental health practitioner to each member’s annual medical exam.

Finally, AFRS recently developed “regeneration centres” in each of its fire halls. Firefighters use these spaces, post-incident and whenever else is required, to de-stress and recover both mentally and physically.

All of these measures underway in the department are important and must continue to be supported, properly resourced and, where possible, strengthened. In the coming years AFRS will review and, where necessary, revise its CISM framework to ensure that all members are well aware of their opportunities and responsibilities under the program. The department will also fully implement the Resilient Minds program across all fire halls, and continue to promote the use of its regeneration centres.

AFRS Mental Health and Safety Steering Committee

To provide additional support and profile to the CISM, Resilient Minds initiative and other existing efforts, and to examine the need for new efforts, AFRS will form a Mental Health and Safety Steering Committee. The Committee will be headed by an Assistant Chief, and will involve a diversity of career firefighters, POC’s and staff. It will be responsible on an ongoing basis for:

- directing the roll-out of Resilient Minds to all firefighters
- examining the value to the department of undertaking additional mental health and safety training through the Road to Mental Readiness (R2MR) program, designed by the Canadian Armed Forces and adopted by a growing number of first responder agencies, including the Abbotsford Police Department and fire departments in other municipalities
- reviewing the CISM Program and recommending, where required, changes the program, or to operational guidelines that help direct the program
- reviewing the need for new operational guidelines and policies to guide the department’s efforts under Resilient Minds and other mental health and safety initiatives
- monitoring information developed by fire service associations (e.g., NFPA) and first responder agencies that have mental health initiatives and support to offer
- raising awareness of mental health and safety issues and programs among crews in all halls
- collaborating on program development with the City’s Human Resources Department, and with other municipal fire departments

RECOMMENDED ACTIONS

- **AFRS will establish a Mental Health and Safety Steering Committee, headed by an Assistant Chief, to oversee the implementation of all existing mental health and safety programs, and to review the need for and recommend, where necessary, the development of new programs**

SECTION 9 EMERGENCY PROGRAM

The City of Abbotsford, similar to all other local governments in British Columbia, is required by provincial statute to:³⁰

- develop local emergency plans that set out how the City will prepare for, respond to and recover from emergencies and disasters that may occur in the community
- have in place the emergency management organizational capacity to develop, practice and implement the emergency plans
- execute the plans and activate the necessary responses when required
- oversee the community's recovery

AFRS is the department in charge of the City of Abbotsford Emergency Program. This section of the *Master Plan* reviews the City's Program, and identifies needs in the coming years.

CITY OF ABBOTSFORD EMERGENCY PROGRAM

In keeping with statutory requirements, the City's Emergency Program consists of a number of key components, including:

- a risk assessment component, supported by the City's 2016 Community Risk Assessment (included in Appendix III of the *Master Plan*)
- a preparation and mitigation component, in which the City sets out and implements various efforts, including infrastructure development, to prepare for anticipated disasters
- a response component, during which representatives from AFRS and other City departments come together in the City's Emergency Operations Centre (EOC) to oversee and direct the City's response efforts
- a City business continuity component, during which City departments work with one another and partner agencies to ensure that essential municipal services (e.g., fire, police, water, sewer, transportation) and community services (e.g., electricity) are functioning properly
- a recovery component, during which the City and community work to restore normal activities

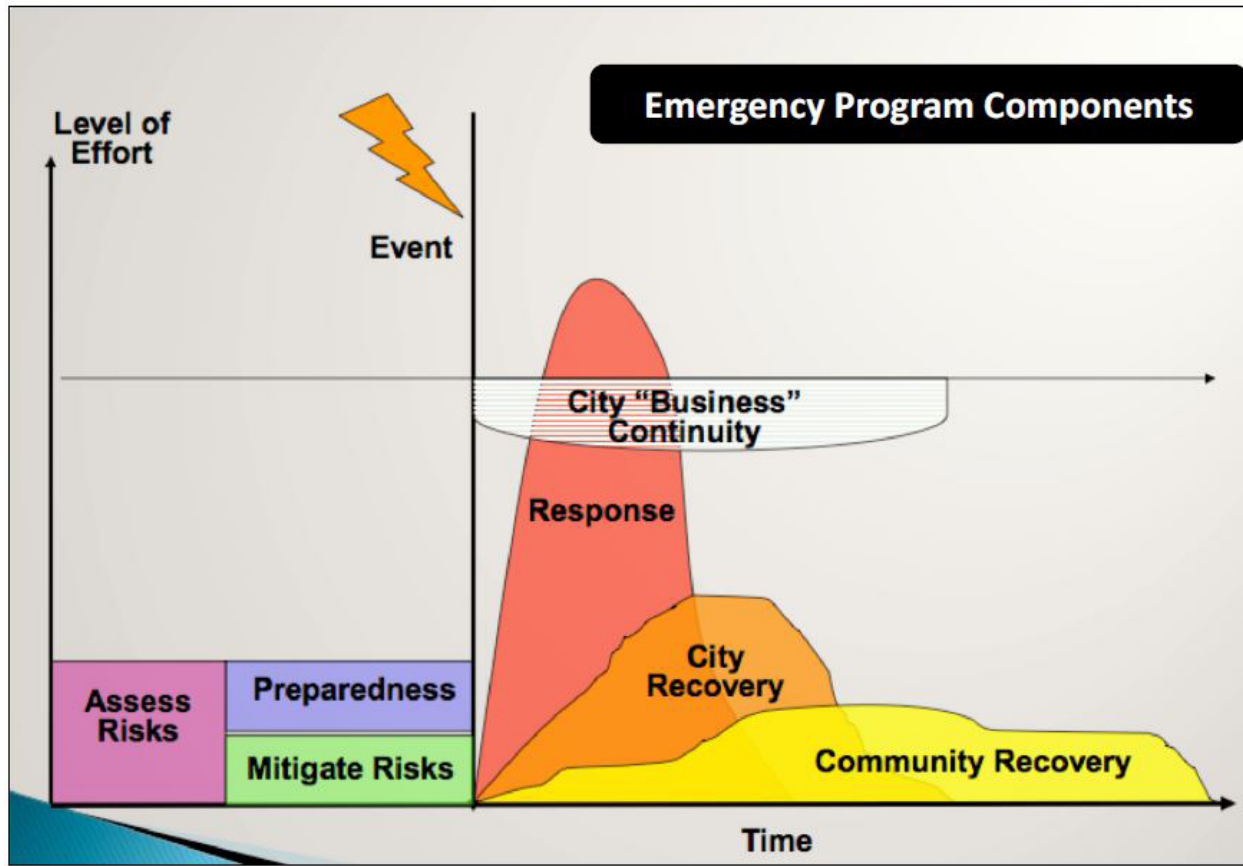
Figure 9.1 shows the various components, as well as their sequencing relative to the disaster or emergency event occurring.

AFRS is the key agency involved in developing and managing the Emergency Program. The Program is administered by the Fire Chief, who is supported by one full-time Emergency Advisor. Overseeing the entire effort is the City's Emergency Planning Committee, which includes representatives of all City departments, along with representatives of partner agencies such as BC Ambulance, Central Fraser Valley (CFV) Search and Rescue Society, School District #34, Fraser Health, Emergency Support Services (ESS), and the Emergency Communications Services (ECS). Three of these partner groups — CFV Search and Rescue, ESS and ECS— have important roles to play during the planning, response and, in the case of ESS, recovery phases:

- **CFV Search and Rescue** — This group of volunteers has trained technicians with various search and rescue skills. The group's expertise is invaluable to the City during the response phase in reaching citizens in distress.
- **Emergency Communications Services** — This group of volunteers consists of amateur radio operators whose expertise is critical in maintaining communications during a disaster.
- **Emergency Support Services** — These volunteers operate reception centres, register citizens, and attend to the essential needs of people during disasters. The members also assist citizens in recovery after disasters.

³⁰ Emergency Program Act, section 6

**Figure 9.1
Abbotsford Emergency Program**



PROGRAM NEEDS

Emergency programming is a critical function for the City and the community. It is also a function that, in normal times, is too often given a lower priority than it requires. AFRS is committed to elevating the function and the City’s Program, both in terms of profile and resources.

AFRS will dedicate a portion of the (new) Emergency and Safety Program Coordinator position (see Section 5 of the *Master Plan*) to working with the Fire Chief and Emergency Advisor on the Emergency Program. In addition, AFRS will explore the development of a stand-alone Emergency Operations Centre with the replacement of Hall 6. Finally, AFRS will seek more opportunities for table-top exercises, as well as opportunities to activate the City’s EOC, so that all City departments, including AFRS itself, can gain valuable experience in Program implementation.

RECOMMENDED ACTIONS

- AFRS will dedicate a portion of the Emergency and Safety Program Coordinator position to the City of Abbotsford Emergency Program
- AFRS will seek opportunities for table-top exercises, and opportunities to activate the EOC, so that all departments can gain valuable experience in Program implementation
- AFRS will explore the development of a stand-alone Emergency Operations Centre with the replacement of Hall 6

SECTION 10 SUMMARY OF RECOMMENDED ACTIONS

Sections 5 through 9 of the *Master Plan* have presented recommended actions for the department to pursue in the years ahead. Figure 10.1 brings the information from these earlier sections together into one summary table.

**Figure 10.1
Summary of Recommended Actions**

SECTION	RECOMMENDED ACTIONS
<p>Section 5: Prevention of Incidents</p>	<p>Community Safety Education</p> <ul style="list-style-type: none"> • AFRS will hire a full-time Emergency and Safety Program Coordinator (ESPC) who will report to the Fire Chief • The ESPC will be responsible for developing a Community Safety Education Strategy, which will include programs that are targeted at specific incidents, populations, neighbourhoods in the City, and behaviours <ul style="list-style-type: none"> » A key program developed for the Strategy will be a Home Safety Visits program • The ESPC will oversee the implementation of the Strategy, and the delivery of its programs <ul style="list-style-type: none"> » Career crews will participate in program delivery, along with active POCs, AFRS career and POC alumni and, where possible, public health professionals • The ESPC, in collaboration with the Assistant Chief (Prevention) will establish KPI's to measure the activity under, and impact of, the programs in the Strategy <p>Compliance Monitoring</p> <ul style="list-style-type: none"> • Using the authority in the Fire Safety Act, AFRS will develop and recommend to Council a new risk-based compliance monitoring system to focus the department's fire safety inspection efforts on high-risk, low-compliance buildings • AFRS will implement handheld tablets for all fire safety inspections to build efficiencies and improve productivity. • AFRS will monitor the issue of unsightly and hazardous vacant residential buildings, and work with other City departments as necessary to develop appropriate regulations and fees <p>Residential Fire Sprinklers</p> <ul style="list-style-type: none"> • AFRS will consult developers, homebuilders and the community as a whole in designing and building support for a City of Abbotsford initiative to require the installation of residential fire sprinklers in all new residential occupancies, including single- and two-

<p>Section 6: Paid-on-Call Firefighters</p>	<p>Recruitment and Retention</p> <ul style="list-style-type: none"> • AFRS will work with other City departments, as well as active POCs and POC alumni, to develop a POC Recruitment and Retention Strategy <ul style="list-style-type: none"> » AFRS will explore opportunities to collaborate with other, nearby composite fire departments in developing the Strategy, and will seek guidance and materials from fire service associations that have developed best practices • AFRS will explore the potential of establishing a new class of auxiliary members assigned to prevention • AFRS will examine the feasibility of requiring POCs who leave before a certain period of service for a career position in another department to reimburse the City for a portion of training and certification costs incurred <p>Scheduled Back-Up</p> <ul style="list-style-type: none"> • With the concurrence of IAFF Local 2864, and under terms set out in a Letter of Understanding, AFRS will schedule POC members, for six-month renewable terms, to provide back-up response from 1400 hours to 1800 hours, Wednesday through Saturday each week
<p>Section 7: Incident Response</p>	<p>Incident Types</p> <ul style="list-style-type: none"> • AFRS will give notice to industry groups and others of its intent to terminate its confined space rescue service • AFRS will develop a specialized water rescue service, and will retain its technical high angle rescue and specialized Hazmat response services • AFRS will pursue equitable cost-sharing agreements with neighbouring jurisdictions for the provision of specialized Hazmat response, technical high angle rescue, and water rescue services <p>Unwanted Alarms</p> <ul style="list-style-type: none"> • AFRS will develop a new unwanted alarms response protocol for non-residential alarm calls <ul style="list-style-type: none"> » The protocol will be based on a risk-assessment, implemented in phases, and informed by the results of consultation with non-residential property owners and the department's dispatch provider (EComm 911) <p>Two-Person Rescue Trucks</p> <ul style="list-style-type: none"> • AFRS will introduce a full-time, 24/7 two-person crew and rescue vehicle to each of Halls 1 and 6 to assist in responding to medical and other incidents that do not require four-person engine response • AFRS will build the new two-person crews using existing staff, where possible, and by hiring new firefighters as necessary <p>Station Locations</p> <ul style="list-style-type: none"> • AFRS will provide full-time career staff in a new fire hall (Hall 9) or a re-located existing hall (Hall 7) to serve the New Neighbourhoods beginning in 2023 or later, depending on the pace of development in the area <ul style="list-style-type: none"> » AFRS will provide, initially, a two-person full-time crew, supported by POC's and career crews from other halls • AFRS will re-locate Hall 6 to assist the department in achieving its urban response-time target in the within the eastern section of the Urban Core • AFRS will pursue automatic aid with the Township of Langley to serve portions of West Abbotsford

<p>Section 8: Firefighter Health and Safety</p>	<p>Physical Health and Safety</p> <ul style="list-style-type: none"> • AFRS will develop and/or update Operational Guidelines, as required, to protect the physical health and safety of its members • AFRS will continue to conduct annual medical exams of its firefighters • AFRS will review recommendations and best practices, from NFPA, Washington State and other agencies, aimed at reducing the exposure of firefighters to carcinogens <p>Mental Health and Safety</p> <ul style="list-style-type: none"> • AFRS will establish a Mental Health and Safety Steering Committee, headed by an Assistant Chief, to oversee the implementation of all existing mental health and safety programs, and to review the need for and recommend, where necessary, the development of new programs
<p>Section 9: Emergency Program</p>	<ul style="list-style-type: none"> • AFRS will dedicate a portion of the Emergency and Safety Program Coordinator position to the City of Abbotsford Emergency Program • AFRS will explore the development of a stand-alone Emergency Operations Centre with the replacement of Hall 6 • AFRS will seek opportunities for table-top exercises, and opportunities to activate the EOC, so that all departments can gain valuable experience in Program implementation



SECTION 11 COST IMPACTS

The sets out a series of recommended actions that, taken together, will create a new service model for AFRS. Several of the actions will be implemented using existing resources; some actions, however, will require the addition of new staffing resources, including additional career firefighters. New staff will be requested through the City's annual budget process, as required, to implement the actions in the *Master Plan*.

New capital costs will also be incurred to bring the Plan to fruition in the coming years. Funds will be required, for example, to replace Fire Hall 6, and to develop a stand-alone Emergency Operations Centre in the new facility. Important seismic and other upgrades to Fire Hall 1 will be needed. Capital dollars to develop a composite fire hall in the New Neighbourhoods will be required at some point, in tandem with the build-out of the McKinley Neighbourhood Planning Area. Finally, capital costs will be incurred on an ongoing basis to upgrade and replace fire apparatus.

Capital reserves exist to support certain expenditures that have been anticipated for several years -- the replacement of Hall 6 is an example. New dollars will need to be budgeted for some of the other expenditures.

Flexibility in the timing of implementation will be important to the success of the *Master Plan* and its service model. The exact timing of capital expenditures, as a result, will be determined on a go-forward basis. It is clear at this point, however, that certain expenditures will be required in the short-term, while others will be more medium- or long-term in nature. The following points speak to these general periods:

- **Short-Term** - Fire Hall 6 will need to be replaced at some point in the next few years. Confirmation on the inclusion of a stand-alone EOC in the new facility will be needed at the same time.
- **Medium-Term** - Sometime before 2028, Fire Hall 1 will need to be upgraded to address seismic and other needs.
- **Long-Term** - The new composite fire hall to serve the New Neighbourhoods will be required as development in the McKinley Neighbourhood Planning Area begins in earnest. It is anticipated that significant activity in the area - and, thus, the need for a new fire hall - will occur in the long-term, after 2030.-



APPENDIX I

BACKGROUND PAPER ABBOTSFORD THE COMMUNITY

An earlier version of the background paper was reviewed by the Project Committee in July, 2017. Comments and amendments provided by the Committee are incorporated into the version included in this appendix.

APPENDIX II

COMMUNITY RISK ASSESSMENT HAZARDS, VULNERABILITIES AND RISKS IN THE CITY OF ABBOTSFORD

SMART RISK CONTROL INC.

APPENDIX III

ABBOTSFORD FIRE RESCUE SERVICE STATION LOCAL REVIEW

DARK HORSE EMERGENCY SERVICES



