PRINCE GEORGE FIRE & RESCUE

Strategic Plan Update

2022

Dave Mitchell & Associates Ltd.

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1.0 Executive Summary

The Prince George Fire & Rescue Service ("PGFRS" or the "Department") provides fire, rescue and medical response services within the City of Prince George ("Prince George" or the "City") and to the Prince George Airport and to adjacent areas by request. The Department responded to 9,208 incidents in 2022 from its four fire halls. The population of Prince George was 76,708 in 2021.

The Department currently operates with 131 personnel and is managed by the Fire Chief, two Deputy Chiefs, a Chief Fire Prevention Officer, a Chief Training Officer, a Chief Communications Officer, an Assistant Chief (Communications), a Manager Emergency Programs and four Assistant Chiefs (Suppression), with one assigned to each of four shifts.

The strategic plan for the Department was undertaken to provide guidance on the further evolution of its service delivery in light of the current regulatory requirements and the Department's operational context, and to provide an update on the 2016 Standards of Cover Report. Dave Mitchell & Associates Ltd. ("DMA" or the "Consultants") was contracted for the review and met multiple times with the chief officers as well as with members of the Department and Prince George senior staff members. DMA examined a wide range of relevant background documentation, conducted an in-depth site review, and provided an initial draft report which was reviewed in detail with the Department and the City. DMA also made a presentation to Prince George Council summarizing the work undertaken and overall strategic plan on 15 August 2022.

The issues facing the Department, like all fire departments in the province, are complex. Provision of fire services in British Columbia is optional, but where they are provided, they are subject to a series of regulatory requirements, including the mandatory provincial training standards (the "Provincial Training Standards") established by the BC Fire Commissioner, as well as the training, equipment and other standards imposed by WorkSafe BC.

This report is based on the 2015 Edition of the Provincial Training Standards, which was the version in effect when the training review was undertaken, and related work conducted. The 2015 Edition was updated as of 28 September 2022, and the document is now titled: *British Columbia Structure Firefighter Minimum Training Standards*.[1] According to Office of the Fire Commissioner ("OFC") Policy 3.200, adoption of the 2022 Edition must be confirmed to the OFC by March 2024.[2] It is recommended that the Department undertake a review of the new standards, identify any additional training issues that may need to be addressed and ensure that compliance is achieved by 2024. In general, as the Department operates at the Full Service level and utilizes National Fire Protection Association ("NFPA") standards in all of its training, the changes arising from the 2022 Edition will have little impact on its operations or training

[1] https://www2.gov.bc.ca/gov/content/safety/emergency-management/fire-safety/training/firefighter-training

[2] https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/emergency-preparedness-response-recovery/embc/fire-safety/policy/3-2_ofc_policy.pdf

processes. Training for Department members is conducted at the fire hall, with some training procedures, such as live fire, being provided at the Quesnel training facility. Other training is provided online.

Fire services in British Columbia are also required to comply with the *Fire Services Act,* which is expected to be superseded by the *Fire Safety Act*. The latter statute passed third reading in the Legislature in 2016, but has yet been proclaimed in force. When the *Fire Safety Act* comes into effect, it will require local governments to provide fire safety inspections somewhat differently than at present, and may extend that requirement to regional districts as well. The *Fire Safety Act* will introduce the concept of risk-based inspections, which may require a formal assessment of specific risks within the City. It also will implement minimum training requirements for fire inspectors and fire investigators, grant additional powers to fire chiefs and local governments, and eliminate the position of local assistant to the fire commissioner.

Other statutory changes that will impact local fire services include the pending update to the *Emergency Program Act,* which is anticipated in 2023. The new statute will include formal implementation of the Sendai Model for risk assessment, reduction, mitigation and response, and likely impose greater obligations on local governments to undertake formal risk assessment and mitigation actions.

The provision of fire services is also guided by the Fire Underwriters, an organization that provides an assessment and grading of fire departments which can affect the cost of fire insurance for single- and multi-family residences as well as commercial and industrial structures. Fire Underwriters' ratings involve an assessment of the fire department, water supply, fire prevention activities and emergency communications. Fire Underwriters' requirements include a maximum age for apparatus to be ratable, minimum pumping capacity requirements based on the service area's fire risks, optimum staffing levels, and training requirements.

In 2020, the Department's responses were significantly affected by the pandemic, as BC Emergency Health Services ("BCEHS") radically curtailed the number of calls sent to the fire service for the period from the end of March to about August/September. Conversely, in 2021, the Department's responses spiked, as BCEHS resources were overwhelmed by the Heat Dome . Viewed over the period 2014 to 2022, however, the Department's total call volume has risen. Notwithstanding the BCEHS-driven variability in the number of FMR calls, since 2018, there has also been a steady rise in other emergency incidents.

The concentration of calls in the City core – within the primary response areas of Halls 1 and 2 – has also increased. Thus, of the greater number of incidents occurring, a larger portion of such calls is concentrated in this core region. Hall 1 and 2's respective response areas accounted for some 77% of all incidents in 2015; they now account for more than 82% of a larger number of calls.

Occupational health and safety issues also have increasingly come to the fore. A total of 18 cancers now presumed related to firefighting under WorkSafe regulations, in addition to existing presumptions for cardiac events and post-traumatic stress disorder claims. These changes are

affecting WorkSafe BC assessment costs for the fire service, and driving the need to better manage, track and limit exposures, and improve mental health processes for Department members.

This report updates the previous report and contains nine new recommendations. Major issues include an additional staffed unit for Hall 1, provision of an appropriate local training site, and provision of a fifth staffed fire hall in the industrial area in the south-east portion of the City.

A recommendation for an additional staffed unit at Hall 1 was part of the 2016 Standards of Cover Report. Since that time, the Hall's call volume has increased by a further 66%, going from 2,903 events in 2016 to 5,409 in 2022.[3]

This report continues to recommend a fifth staffed firehall in the BC Rail industrial area, concurring with the recommendation of the Fire Underwriters. This additional unit will primarily address the fire risk associated with this area and will also provide additional response capability in the core of the City.

[3] The Fire Underwriters in two recent surveys, one in Metro the other in the Capital Regional District note that 2,500 is the threshold at which a second unit is recommended: *Final apparatus needs are then based on the frequency of alarms for a fire company and total number of "Fire" calls annually. Where a Pumper company receives in excess of 2,500 calls per year, additional companies are needed.*

2.0 Summary of Recommendations

The following section extracts the recommendations contained within the report. The more expansive discussion in the report contains details regarding each of these recommendations. For convenience, the relevant headings from each section are included as a guide to the section from which the particular recommendation is extracted.

3.0 2016 Standards of Cover Report – Status

Table 1 in this section lists the recommendations from the 2016 Standards of Cover Report. There are four recommendations in progress and two to be completed.

5.0 Regulatory Matters

#5-1: Consider updating Bylaw No. 8272.

#5-2: Revise/update the OH&S program based on the discussion in this section.

7.0 Response Analysis

#7- 1 Consideration should be given to improving the training facilities (currently the fire hall setting). This should include a dedicated Department training site (possibly located in the industrial area) to simulate scenario-based common types of incidents and allow for live-fire exercises. The site should also include training rooms, required training facilities/equipment and outside props. The configuration for this training site should be led by a clear needs analysis including the options for partnerships with the JIBC and First Nations and then to retain one of a number space-planning companies to ensure the spatial requirements are well understood prior to developing a budget and authorizing construction.

8.0 Organizational Structure and Staffing

#8-1: The City should prioritize the addition of one staffed engine in Hall 1.

#8-2: The City should develop a plan to staff one additional engine for the proposed fire hall (Hall 5) in the BC Rail area.

10.0 Risk Assessment / HRVA

#10-1: That the Department consider adopting NFPA 1300 as a model for Community Risk Assessment and Community Risk Reduction.

11.0 Fire Prevention Branch

#11-1: The Department should review the staffing levels and responsibilities allocated to the Fire Prevention Branch and make the necessary changes to ensure that adequate resources are available to meet the mandate of the division.

13.0 Training and Qualifications

#13-1: Consideration should be given to improving the training facilities. (currently fire hall setting) This should include a dedicated Department training site (possibly located in the industrial area) to simulate scenario-based common types of incidents and allow for live-fire exercises. The site should also include training rooms, required training facilities/equipment and outside props.

#13-2: The Department should develop a plan to achieve compliance with the September 2022 Provincial Training Standards by Q2 2024.

3.0 2016 Standards of Cover Report – Status

The 2016 Standards of Cover Report (the “2016 SOC Report”) provided a total of 24 major recommendations. Of these 18 have been fully completed, four are in progress and two remain to be addressed. The recommendations and progress achieved are summarized in Table 1.

The four items marked as ongoing were reviewed with the Department and they are to be commended for the work done to address these. Of these, the rewrite of the bylaw can likely be delayed until the *Fire Safety Act* comes into force, since that will affect the Department regulatory responsibilities and will need to be incorporated into the bylaw structure. It is possible that the act will finally come into force at some point in 2023.

Table 1: 2016 Standards of Cover Report - Update

2016 SOC Report Recommendations	2022 Status	Update/Notes
Training		
Consideration should be given to improving the training facilities. (currently fire hall setting) This should include a dedicated Department training site (possibly located in the industrial area) to simulate scenario-based common types of incidents and allow for live-fire exercises. The site should also include training rooms, required training facilities/equipment and outside props.	To be completed	Recommendation for 2023 budget
Currently most of the training provided is for firefighters; more should be provided for the fire officers. Tailor the curriculum for the positions.	Complete	Bi-annual crew officer strategies and tactics sessions added and conducted through training Branch
We would recommend that the Department undertake an internal review of all rescue services currently provided to determine: 1) If the service needs to be provided by the Department, 2) The required training levels necessary to provide that service, 3) The actual funding needed to provide that service including equipment, initial training and on-going maintenance training. Once these questions have been answered, the Department should seek appropriate approval and funding from the City.	Complete	Complete review of all rescue services; each program formalized; written guidelines and procedures; training frequencies and budgets
To ensure competency is maintained, an annual skills maintenance training plan including evaluation models should be developed. The plan should encompass all aspects of firefighter and officer training including those skills required for specialty teams.	On going	2019 Reviewed and updated RMS Training reporting structure resulting in efficiencies in tracking assigned training by rank and specialty

2016 SOC Report Recommendations	2022 Status	Update/Notes
The current system of training members on their days off and accumulating days off is not working. Members are not required to attend training sessions and as such training in several specialties is often suffering (e.g., high angle and water rescue). The Department continues to respond to these events albeit with members who are not always trained as well as they need to be. This is a safety issue for both the members and the public they serve. Serious consideration should be given to either fully funding the required training or to cease providing (or significantly limit) the service.	On going	Refocused training sessions as on site and off site; on site can be completed while crews are on shift and response ready. Off site sessions put crews in a non-response ready mode. Tested up staffing a 'training crew' this spring to complete auto X refresher training with all crews while on shift
That the Department consider more web-based on duty training.	Complete	Web based and online training incorporated into daily on shift training
Fire Prevention Branch		
Expand the FPB's role to include a plan check for new construction, with a focus on major commercial, industrial, public institutional and multi-family projects, to ensure compliance with the Fire Code and with the Department's operational requirements.	Complete	Web based and online training incorporated into daily on shift training
The FPB requires a full complement of active staffing to meet its mandate and ensure the City meets its statutory obligations under the FSA. The Department should review whether some additional assistance is required to address the existing backlog in inspections.	Complete	CFPO accepts develop and building permit plans; reviews for code compliance and provides feedback through Development Services prior to permits be issued

2016 SOC Report Recommendations	2022 Status	Update/Notes
The Department should review the conduct of fire inspections by duty crews and increase the number of inspections and reinspections that are assigned to such crews.	Complete	Property inspections are reviewed on a regular basis and division of inspections are spread through Prevention Inspectors and Duty crews based on risk level
With the increase in the number of inspections by duty crews, the FPB should review the inspection frequency. The goal should be to ensure that all inspectable properties are reviewed at least annually; where possible, the highest risk properties should be reviewed more frequently.	Complete	Hall 3 and 4 properties were adjusted to 1 year cycles
In the updating of the Department's operational and establishment bylaw, ensure that there is clear language permitting the Department to require the submission of additional information with a fire safety plan, that is necessary for pre-incident planning, and that such information is submitted in an electronic format that will enable the Department readily to develop effective pre-incident plans.	Complete	Pre-plan guideline and procedure developed resulting in construction fire safety plans required at development phase and transitioned in pre-plans once construction complete
The Department and City should consider requiring that the most significant industrial / commercial risks, which require the most detailed fire safety plans, have their fire safety plans certified by an external third party before submission for review by the Department.	Complete	High commercial/industrial risk properties are required to have consultant supported fire safety plans completed
The FPB identify all properties in respect of which pre-incident plans should be created, and prioritize those properties based on risk.	Complete	Fire Safety Plan for all commercial properties completed

2016 SOC Report Recommendations	2022 Status	Update/Notes
The Department should develop or acquire a user-friendly electronic template for pre-incident plans. The “D” shift crew at halls 3 and 4 should be trained to develop pre-incident plans from fire safety plan data. Duty crews should be responsible for developing pre-incident plans for simpler or more straightforward risks only, as determined by the CFPO.	Complete	Crews complete pre-plan check list and add required info/data to site drawing; Admin staff supported by inputting data into Arc GIS Pre-plan layer
The FPB should remain responsible for developing pre-incident plans for all major industrial, commercial and institutional risks in the City.	Complete	FPB maintain Pre-plans during site inspection cycles
Before any pre-incident plan goes live, it must be checked through a physical inspection of the property in question. Pre-incident plans should be regularly reviewed as part of the annual fire safety inspection for each property for which they exist.	Complete	All pre-plans are on 2nd or 3rd cycle; reviewed during each inspection cycle for any changes or updates
The Department should ensure that its powers of entry for investigating fire hazards on complaint or where the FPB or Department members have a concern, are clearly set out in the revised establishment and operational bylaw. The Department should develop clear operational guidelines for dealing with problem properties, including coordination with law enforcement and socials service agencies, where required.	Ongoing	Bylaw rewrite still to be completed; guideline and procedures for managing problem properties have been updated and incorporated prior to bylaw update
That the FPB be fully staffed (4 FTEs) and that personnel on long term absences are replaced on a temporary basis until their return to active duty.	Complete	Light duty or limited duration positions have been incorporated in the past and will be utilized in the future

2016 SOC Report Recommendations	2022 Status	Update/Notes
That the FPB in cooperation with the Building Department implement a plan checking program for all new construction and major renovations in existing buildings. This may require additional training for the existing staff.	Complete	CFPO accepts develop and building permit plans; reviews for code compliance and provides feedback through Development Services prior to permits be issued
That the City of Prince George develop a policy whereby all lower risk properties are conducted on a bi-annual basis and that all high-risk properties are conducted on an annual basis.	Complete	RMS is designed to prompt inspections based on risk level every 365 or 730 days
That duty crews are assigned all lower risk inspections and those higher risk inspections that the Chief Fire Prevention feels are appropriate for duty crews. Those high-risk buildings not assigned to the duty crews will remain the responsibility of the FPB. This may require additional training for existing staff.	Complete	Suppression staff have completed multiple comprehensive online and inhouse inspection training
Response Analysis		
Consideration should be given to improving turnout times throughout the Department. This may not be easily achievable if fire hall ergonomics are the issue, however, often a simple process of educating the crews to the importance of quicker turnout times can effect improvements.	Ongoing	Under review based on updated CAD data
Fire Halls And Apparatus		
Consider replacing Hall 1 with larger headquarters hall south of the current location. This could be at or near Victoria and 20th Avenue. The fire hall should provide a minimum of four drive through bays.	Completed	

2016 SOC Report Recommendations	2022 Status	Update/Notes
Consider adding a second staffed unit at Hall 1 to deal with the significant call volume at this hall. A second staffed unit would also provide a better opportunity to meet the NFPA 1710 requirements to have a minimum of 14 fire fighters on scene in 8 minutes.	To be completed	Recommendation for 2023 budget

4.0 Community Background

The Official Community Plan ("OCP") is contained in Bylaw 8383 adopted 25 June 2012 and updated 31 March 2021.[4] The OCP notes that the City is located within the traditional territory of the Lheidli T'enneh First Nation.[5]

The City covers a total area of some 318 square kilometres and in 2021, had a population of 76,708, a 3.7% increase over 2016. The 2012 OCP estimated that the City's population would be between 78,900 and 90,200 by 2025, and it appears on track to achieve the lower range of that estimate.[6] The population is young by provincial standards, as the City has a median age of 39 compared with 43 for the province.[7]

The Department was established in 1914 and operates as a career fire department. The Department provides fire suppression, emergency medical services and special response services, such as vehicle extrication and some technical rescue, within the City limits, an area of approximately 318 square kilometers.

The Department's service area consists of a high-density urban city core, large expanses of mixed suburban and commercial development, and a large industrial area which includes several pulp mills, chemical manufacturers and a petroleum refinery. Major rail lines and transport corridors run through the City, along with oil and gas pipelines, and a major rail yard that lies directly adjacent to the urban city core. In addition to this very unique set of industrial risks, the City has a significant urban interface wildfire risk, meaning that its overall risk profile is elevated compared to most cities of a similar size.

The OCP includes a number of references to the Department and its operations, including:

> Policy 13.4.29: The City shall pursue updating our city's Fire Underwriters Survey grading certificate which evaluates our city's fire risk and fire protection levels.
>
> Policy 13.4.30: A Fire Master Plan should be developed for fire rescue services and consider calls for service in consideration of expected population projections to: identify any fire service deficiencies, determine feasibility for and location of a new fire hall and, identify appropriate siting criteria for such use.[8]

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[4] Available at: https://www.princegeorge.ca/Business%20and%20Development/Pages/Planning%20and%20Development/OfficialCommunityPlan.aspx

[5] OCP, at p. 12.

[6] OCP, at p.13.

[7] https://communityinformationtool.gov.bc.ca/cit-dashboard/home, accessed November 14, 2022.

[8] OCP, at p. 209.

The City followed through on these recommendations. It commissioned a Fire Underwriters' review in 2013, and undertook the 2016 SOC Report. Some follow up on the Fire Underwriters review was recommended in the 2016 SOC Report, and is reiterated here.

5.0 Regulatory Matters

As a starting point, it needs to be recognized that, for local governments, fire protection is an optional service. Unlike police and ambulance, which are established under and/or operate pursuant to provincial statutes and have a uniform range of powers across the province, a fire department only has the power and authority granted to it under the local bylaw which creates and defines its operations. Outside of its operating jurisdiction – which, in the case of a service established by a municipality, is the municipal boundaries – a fire department has no specific authority to act at or to respond to an incident. Care must be taken, therefore, to ensure that the Department has the full range of powers needed to respond effectively to incidents within its jurisdiction. Where it is responding outside of its ordinary jurisdiction, express consideration should be given to the source of the Department's powers to respond to and operate at an incident – whether under a fire service contract, under a mutual or automatic aid agreement, or in support of another emergency response agency.

Similarly, there is no standard range of services defined for a fire department. A fire department is authorized to provide only those services which are stipulated in its service establishment and operational bylaws. Given that fire departments are the only "all hazards" response agency directly controlled by local government, we recommend that both the grant of powers and authorization to respond to incidents be very broadly cast, but that their exercise be made subject to training and the availability of necessary personnel and equipment.

This section reviews the existing bylaw structure governing the Department's establishment, administration and operations. It also reviews the *Fire Safety Act*, which will potentially impact the Department and the City, as well as the Department's occupational health and safety program. The City's emergency measures bylaw is reviewed in the emergency program section of this report.

Nothing in this report should be construed as legal advice. The City and the Department should review any recommendations or issues identified in this report through the City's ordinary legal review processes.

5.1 Bylaw No. 8272

The *City of Prince George Fire Protection and Emergency Response Bylaw No. 8272, 2013* ("Bylaw No. 8272") is the principal bylaw governing the Department's continuation, organization, operations, and powers. It is a comprehensive bylaw, addressing both operational and fire prevention matters, including open air burning, Fire Code issues and *Fire Services Act* inspections. Bylaw No. 8272 is now about a decade old. Various regulatory changes – such as the introduction of the Provincial Training Standards, a new version of the Building Code being passed, new open burning smoke control regulations, etc. – have taken place since it was first passed. The Department has been working on updating Bylaw No. 8272 since the 2016 SOC Report. It may be useful for it to plan a new version based on the *Fire Safety Act*, which can then be introduced and passed once that statute comes into force.

Bylaw No. 8272 is generally well drafted and carefully constructed. It is a long and complex bylaw, as it combines both Department operational and administrative matters, along with a wide range of fire prevention and Fire Code issues. At a high level, it covers the following:

- the exclusion or limitation of liability of the City arising from the issuance of permits or the exercise (or failure to exercise) any powers or rights created by the bylaw (ss. 3.4, 3.5, 3.6 and 3.7);
- the continuation of the Department, and the Fire Chief's reporting lines (s. 5.1);
- the appointment by the Fire Chief of Department members (s. 4.1, definition of "Member");
- the powers and responsibilities of the Fire Chief and Deputy Fire Chief (ss. 5.2 and 5.3), and very broad powers for the Fire Chief in relation to the management and control of the Department (s. 5.4);
- the Department's jurisdictional limits and the authority of the Fire Chief to authorize extra-jurisdictional responses (s. 5.5);
- the powers and authority of the Fire Chief and Department members in relation to both incident responses and various non-emergency matters (e.g., ss. 6.1 (incident responses), and ss. 7.1, 8.2, 10.9, etc.);
- the power to issue orders requiring property owners and other to remove or correct fire hazards (ss. 9.1, 10.2), or to require a property owner to undertake a wildfire risk assessment and corresponding risk mitigation activities (s. 10.1);
- the operation of a regular system of inspections as contemplated by the *Fire Services Act*, and various powers which may be exercised in connection therewith (ss. 7.1- 7.3, 8.1 – 8.2);
- various other fire prevention matters, including: the regulation of exterior waste receptacles which have any dimension larger than 1.5 metres (s. 10.3); service station safety (s. 10.4); open air burning (s. 10.5); the regulation of barbeques (s. 10.6); obligations of owners or occupiers to properly maintain commercial cooking equipment (s. 10.12); the management of exit and emergency lighting (s. 10.14), etc.;
- the authority of the Fire Chief to issue permits or grant authorization for various matters, such as open burning, alterations to fire safety systems, and other matters (ss. 10.7, 10.13, and Parts 21 and 22);
- various powers and authorities for the Department, and obligations for property owners and occupiers, in relation to fire safety plans, pre-incident planning, fire department water connections, building signage, and visible addresses (ss. 11.1 – 11.8);

- management of contact persons for buildings with fire alarm systems (Part 12), the implementation of fire watches (Part 13), and the obligations of owners in relation to vacant and fire damaged buildings (s. 10.10);
- the management of sprinkler and fire alarm systems (Parts 15, 16 and 17);
- the management of private fire hydrants (Part 18);
- certain regulations regarding the use of smoke alarms (Part 19);
- the regulation of fireworks (Part 20); and
- various fees and charges that may be levied and processes for collection and enforcement of the bylaw (Parts 23 and 24).

We have previously provided detailed comments on this bylaw to the Department in the 2016 SOC Report.[9] In addition to updating various statutory references, the following additional matters should be considered for revision:

- In a number of more recent bylaws of this type, language has been included that seeks to limit the local government's liability for a delayed or insufficient response to an incident. For example, in the Metro Vancouver bylaw governing the Sasamat Volunteer Fire Department, there is a provision to the effect that the bylaw does not contemplate the protection of any person from economic loss; a warranty or guarantee as to the service levels that will be provided in connection with any particular incident; or any guarantee with respect to the timeliness of any response.[10] The City should consider with its legal counsel whether such language would be useful to include in any update of its bylaw, in addition to the exculpatory language that already exists.
- It is common in bylaws of this type to describe how the Fire Chief is appointed (e.g., by Council, or through some other process). Similarly, in the section dealing with the Deputy Fire Chief, as well as the various officer positions, the process for making relevant appointments should be set out, at least at a high level (e.g., by the Fire Chief).
- In connection with extra-jurisdictional operations (section 3.8) where no service agreement or mutual aid arrangement exists, the City should consider whether it is appropriate that the Fire Chief authorize such a response, or whether the issue should be subject to permission being granted by either the CAO and/or the Mayor. At the same time, consideration needs to be given to the source of the Department's operational powers outside of the City's jurisdictional limits. The absence of any mutual aid arrangements with the Regional District of Fraser-Fort George means that the nature

[9] A mark up of the bylaw was provided when the previous review was conducted in 2016. A slightly revised version of that document has been provided separately to the Department for its consideration.

[10] Metro Vancouver, *Sasamat Volunteer Fire Department Administration and Regulation Bylaw No. 1204, 2014*, s. 1.5.

and extent of the Department's operational authorities beyond its boundaries are very uncertain.

- The bylaw should include authority for the Department to respond extra-jurisdictionally if it is operating under a service agreement or mutual aid agreement, and in connection with any state of local or Provincial emergency that may be declared.

- The use of the term "Authority Having Jurisdiction" (see sections 10.12 and 14.3, as well as the "Definitions" section) should be limited to its technical application under the Provincial Training Standards. In the other provisions that use this term, the relevant authority having jurisdiction (e.g., the City, or the Department) should be identified.

- The obligation of the Fire Chief to ensure compliance with the Provincial Training Standards and *Workers Compensation Act* requirements for training of personnel, corresponding records keeping, and supervision, should be added to the bylaw. The process by which the Department's service level is set also should be specified (with the service level either being set in the bylaw itself or by council policy).

- It is useful (and increasingly common) to list the services expected to be provided by the Department in its bylaw. At the same time, a process for setting the level of service provided in relation to any such service should be set out (e.g., "determined by the Fire Chief in consultation with the Director of Public Safety and Civic Facilities, and the City Manager, subject to any direction of Council"). It is critical to note that every specialty service – be it technical rescue, hazardous materials response, vehicle extrication or otherwise – carries with it increased training, equipment and staffing costs.
    - In relation to medical responses, consideration should be given to authorizing the Department to provide "emergency health services," subject to any agreement with BC Emergency Health Services, and "ancillary health services", in each case as defined in the *Emergency Health Services Act*, and subject to proper training and licensing in accordance with provincial requirements.

- In relation to enforcement of the bylaw through a ticketing process, it would be useful to cross-reference the City's municipal ticket information bylaw (Bylaw No. 8919) in section 24.1 of Bylaw No. 8272.

5.2 Fire Safety Act

The *Fire Services Act*, which grants certain powers and authority and imposes certain obligations on municipalities, is slated to be replaced. The *Fire Safety Act* received third reading back in May 2016, but still has not come into force. The Office of the Fire Commissioner (the "OFC") is in the process of completing the regulations and policies which are needed before the statute can come into effect. It is unclear when these processes will be finalized. More significantly, in a 2018 letter from the Minister of Public Safety and Solicitor General to the Union of BC Municipalities, the Province announced that it was going to amend

this new statute in a way that would materially impact the obligations of regional districts.[11] These potential amendments, and on-going discussions between the Province and regional districts regarding their implications, have delayed the statute from coming into effect. Our understanding is that the new statute is unlikely to come into effect until some time in 2023 at the earliest.

However, once the new act comes into force, it will materially affect the City's obligations with respect to fire inspections and fire investigations. As such, it is useful to understand what these new obligations will be, and to build them into the Department's medium-term planning. As suggested above, a replacement for Bylaw No. 8272 could be developed based on the *Fire Safety Act* and introduced when the new statute comes into force. At a high level, this new statute impacts the following principal matters relevant to the City and the Department:

- the fire inspection regime applicable to public buildings;
- fire investigations; and
- the powers exercised by fire chiefs and local governments.

Fire Inspections

Under the *Fire Safety Act*, the existing obligation to operate a regular system of inspections is replaced by the obligation to establish a risk-based compliance monitoring system for public buildings which encompasses:

- fire safety inspections; and
- fire safety assessments.[12]

Following a transition period, "fire inspectors" will need to meet the training and proficiency requirements prescribed by the Fire Commissioner.[13] Those requirements, which are expected to be similar in format to the Provincial Training Standards, have not yet been issued. However, these new training requirements will potentially impact the training of Department officers and members, who will have to meet the new standards if they are to be made responsible for fire safety inspections. As duty crew inspections – i.e., inspections by suppression crews – are regularly used by the Department, additional training may be required for members and officers.[14]

The new provisions mean that the Department will need to conduct risk assessments of public buildings within its service area. Those assessments will need to comply with the (yet to be

[11] Letter, Farnworth (Minister of Public Safety and Solicitor General) to Booth (President, Union of BC Municipalities), 30 July 2018.

[12] *Fire Safety Act*, s. 20. The term "public buildings" is defined in s. 1.

[13] *Fire Safety Act,* s. 8(2). The transition period is provided for in s. 53.

[14] The Department's Fire Prevention Division staff are well trained and will undoubtedly exceed the minimum standards likely to be specified.

issued) regulations under the *Fire Safety Act*.[15] An inspection regime will then need to be developed based on the risk assessments that are conducted. Conceptually, the *Fire Safety Act* moves away from the existing "regular" inspection requirements, where, in practice most jurisdictions seek to inspect all properties annually, and heads towards a more flexible regime, where inspection frequency is based principally on risk. Under this approach, higher hazard or non-compliant properties should be subject to more frequent inspections, while lower risk, compliant properties can be inspected less frequently (perhaps coupled with intervening self-assessments by the owners during the non-inspection years).

The new *Fire Safety Act* also introduces the concept of a "fire safety assessment," which is the self-inspection of a property by the owner. Under the existing *Fire Services Act*, there is some uncertainty about whether self-inspection systems comply with the statutory requirements.[16] That issue is now laid to rest. However, it will be up to the City to determine which public buildings are to be permitted or required to conduct self-assessments, presumably as part of the overall risk analysis that must be conducted. The new self-assessment by owners will have to be conducted "in the form and manner required by the Fire Commissioner" under the new statute.[17] It is expected that the Fire Commissioner will issue policy or forms covering fire safety assessments, though these have not yet been released.

Section 10 of the *Fire Safety Act* grants various powers to fire inspectors to enter premises,[18] conduct their inspection (including testing and taking of samples, etc.), and to require the production of records related to the premises by the owner or occupier. Section 11 empowers a fire inspector to issue orders requiring an owner bring the property into compliance with the *Fire Safety Act* and regulations (which regulations will include the *Fire Code*).

The Department will need to incorporate the risk assessment obligation into its future workplans and budgeting. It may be that the OFC will permit generalized assessments, based on property type, to form the basis of such risk determination. However, it would be useful to conduct more detailed assessments where location, age, condition, use and site-specific features (e.g., exposures, or access issues for a Department response), would suggest that the building or premises present a higher risk than otherwise would be expected from the building classification alone.

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[15] *Fire Safety Act*, s. 20(1)(b).

[16] For opposing views, see the Fire Inspection and Prevention LAFC Inspection Working Group Sub-Group, *BC Fire Services Act: Regular System of Inspections – Considerations for Development* (January 2015) at p. 8 (suggesting such a system, on its own, is not compliant with the *Fire Services Act*); versus: L.C. Staples, Q.C., "Opinion letter to Fire Chiefs' Association of British Columbia," dated 30 Aug. 2012, which holds that such a system of self-inspections can be implemented in compliance with the existing *Fire Services Act* requirements.

[17] Fire Safety Act, s. 21(1).

[18] The power is specifically limited in s. 10(2) to exclude private dwellings unless a warrant has been obtained.

Under ss. 20(2) and (3) of the *Fire Safety Act*, the City may, by bylaw, charge "a reasonable fee" for conducting a fire safety inspection required by the new Act. Subsection 20(4) specifies the criteria which are to be applied when setting such fee.

Fire Investigations

While an argument can be made that Local Assistants to the Fire Commissioner ("LAFCs") (and not local governments *per* se) are currently responsible for fire investigations and reporting,[19] the new *Fire Safety Act* makes it clear that the obligation will now fall directly on the "local authority" (which includes a municipality). The requirements relating to fire investigations are set out in Part 7 of the *Fire Safety Act* (ss. 22 – 27). As with fire inspectors, a local authority:[20]

> must designate in writing persons or a class of persons as fire investigators to conduct fire investigations.

Following a transition period, fire investigators must meet the training standards which are to be specified by the Fire Commissioner.[21] Those standards have not yet been promulgated. These new training requirements will likely impact the Department's officers and fire prevention members, who are most likely to be charged with investigating fires. As with fire inspections, the Department's Fire Prevention Division members are already well trained in conducting fire investigations. However, it may be necessary to train up members who act as incident commanders to enable them to conduct fire investigation on basic fires.

Under section 25, each local authority is required to commence a fire investigation within five days of learning of a fire that has destroyed or damaged property or resulted in death or injury. The investigation must examine the "cause, origin and circumstances" of the fire. The facts ascertained about the cause, origins and circumstances of the fire must then be submitted to the OFC within 30 days after such fire.[22]

Fire investigators are granted broad powers of entry onto property or premises for the purposes of conducting a fire investigation, and to remove a record or thing, conduct testing, take samples and make such records, as required.[23]

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[19] As noted on the Province's website, when fulfilling the role of an LAFC, a fire chief, or other appointed fire department member, is accessing "provincial authority of the fire legislation and is accountable to the fire commissioner, not the local government." See: www2.gov.bc.ca/gov/content/safety/emergency-management/fire-safety/lafc (accessed 25 May 2022).

[20] *Fire Safety Act*, s. 23(1).

[21] *Fire Safety Act* s. 23(2); the transition period is provided for in s. 53.

[22] It is unclear in the statute whether the report must be submitted 30 days after the date of the fire, or 30 days after completion of the investigation of the fire.

[23] *Fire Safety Act*, s. 27.

Powers and Authority

Under the *Fire Services Act*, powers and authority were granted principally through the mechanism of appointing fire chiefs (and others) as LAFCs.[24] The role of local assistant, however, is being abolished.[25] In place of the powers granted to local assistants, the new statute:

- grants a fire chief (or designate) the power to order a tactical evacuation where he or she "believes that there is an immediate threat to life due to a fire or explosion";[26] and
- deems "fire chiefs", fire investigators and fire inspectors to be peace officers for the purposes of the new act.

In addition, as noted above, broad powers are granted to fire investigators conducting investigations, and to fire inspectors conducting inspections. Additionally, local authorities are granted the power to order a "preventive evacuation" where the local authority "believes that conditions exist on or in the premises that fire on or in the premises would endanger life."[27] Each of these new powers should be contemplated in any updated bylaw.

When the *Fire Safety Act* comes into force, it will be necessary to update Bylaw No. 8272, to address the new requirements and authorities.

5.3 Occupational Health and Safety

The statutory basis for occupational health and safety ("OH&S") programs is found in the *Workers Compensation Act* [RSBC 2019], ch. 1 (the "WCA"), and the *Occupational Health and Safety Regulation*, B.C. Reg. 296/97 (the "OH&S Regulation"), as well as in other regulations and the policies of WorkSafe BC. The requirements are complex and prescriptive. The WCA was recently comprehensively updated and revised: although the changes made were not substantive, virtually all of the divisions and sections were renumbered.[28]

The Department members are employees of the City for workers' compensation purposes. As such, it is the City's responsibility to ensure that the various obligations under the WCA and OH&S Regulation are being met.

[24] *Fire Services Act,* s. 6.

[25] Under s. 55 of the *Fire Safety Act*, local assistants are required to return their badges within three months of the new statute coming into force.

[26] Fire Safety Act, s. 13.

[27] On fire inspectors' powers, see ss. 10 and 11; on fire investigators' powers, see s. 26. The power of a "local authority" to order a preventive evacuation is set out in s. 14 of the *Fire Safety Act*.

[28] The WCA was updated under the *Statute Revision Act*, with the revised statute brought into force with effect as of 6 April 2020, pursuant to OIC 103, 20 March 2020, and OIC 153, 30 March 2020. Under the *Statute Revision Act*, the updating can clarify and reorganize the statute in question, but not make substantive changes to it.

The WCA mandates that the relevant local government's occupational health and safety program is supposed to apply to its fire department.[29] Many local governments, however, develop a compliant, standalone program for their fire departments, given the special circumstances and risks that they face. The Department has a standalone program, that is implemented through its operational guidelines ("OGs").[30] That program comprises 15 separate parts: it largely tracks the form of a program first developed in the 1990s by OFC for use by the fire service. The Department has added to that program, by including a policy on "Workplace Wellness" and a policy on alcohol and drugs, as Parts 14 and 15, respectively.

The OH&S Program document is titled as "Appendix," but shown as an OG. However, it is not dated and signed like most OGs. It would be useful to have a formal date attached to the document and to track any changes that may be made to the program. In Part 13, there is provision for the mandatory review of the functioning of the Joint Committee (as required by s. 3.26 of the OH&S Regulation). However, there is no provision for a periodic review of the OH&S Program itself.

From the Joint Committee minutes, it is clear that the City conducts an annual review of OH&S processes, and that the Department participates to some extent in that review. However, it is not clear that such review extends to the Department's standalone program. We would recommend adding an additional section to Part 13 (as a new s. 13.02), stipulating that the Joint Committee will ensure that the OH&S Program is reviewed annually. The fact of that review (even if no changes are made) should be recorded in the Joint Committee minutes.

In relation to the OH&S Program itself, we would note that Part 2, although entitled "Written and Practical Safe Work Procedures," actually addresses personal protective equipment and use of other Department equipment. We would suggest:

- adding a new section to Part 2 that deals with the Department's Operational Guidelines, which constitute the Department's "written and practical safe work procedures"; and
- revising the title to refer as well to Personal Protective and Other Equipment.

As an aside, we would note that the implementing operational guideline - OG 1.01.02 – actually references the OGs as the written work procedures and makes no mention of personal protective or other equipment.

Proper OGs are critical for the fire service, and as noted by the OH&S Program, a WorkSafe BC requirement. We note that the Joint Committee is active in reviewing various Department OGs – though it would be useful in the meeting minutes to identify which are OGs are being reviewed and what process informs how OGs are brought forward for consideration.

[29] The language in section 3.1(1.1) of Part 3 of the OH&S Regulation notes that the employer's OH&S program must cover the "whole of the employer's operations".

[30] The Department's OH&S Program is shown as OG 1.01.16 and comprises 15 separate sections.

Also in Part 2 of the OH&S Program, sections 2.05 and 2.06 deal with the provision and use of SCBA. The Department has developed a comprehensive set of OGs covering the use of SCBA, which it refers to as its "Respiratory Protection Program" (comprising OGs 1.02.01 – 1.02.11). We would suggest adding a reference to the Department's "Respiratory Protection Program" in sections 2.05 and 2.06 of the OH&S Program.

In relation to the Respiratory Protection Program, we note that the OGs are detailed and expansive. They appear to cover the requirements of Part 8, ss. 8.32 – 8.45, and Part 32, ss. 31.19 – 31.26, of the OH&S Regulation. Among other critical elements, proper periodic fit testing and proper SCBA maintenance, are covered in detail (and actively tracked by the Joint Committee – particularly the annual fit testing). In those OGs, however, where they cross-reference to the OH&S Regulation, reference to both Parts 8 and 31 should be included – e.g., in OG 1.02.02, and OG 1.02.08.

Under OG 1.02.09, an annual review of the Respiratory Protection Program is required to be undertaken. We did not see reference to such review in the Joint Committee minutes.[31] It may be that this program is reviewed as part of the City's annual processes, but if that is so, it should be more clearly reflected in the Joint Committee minutes (even if no changes to the program are warranted). Alternatively, it should formally be made part of the regular year-end review the Joint Committee undertakes of its own processes.

Part 6 of the OH&S Program includes provision for a Workplace Hazardous Materials Information System, and the Joint Committee minutes demonstrate that the Department actively manages this obligation.

Under section 31.3 of Part 31 of the OH&S Regulation, where an employer is required to maintain a joint committee, its fire department is required to operate a separate joint committee.[32] The Department has a separately constituted joint committee established in accordance with Part 11 of its OH&S program. In connection with Part 11, consideration should be given to the following issues:

- Worker representative selection: section 11.02 provides that the Department's membership "will elect…Safety Representatives." Subsection 34(a) of the WCA, however, provides that, where workers are represented by a union: "the worker representatives are to be selected according to the procedures established or agreed on by the union." While the election process may have been agreed with the union, we would suggest that the WCA requirements be more completely reflected in this section.

[31] The minutes of 14 December 2021 noted that, as part of the annual OH&S process review (in this case, conducted by representative from the City of Kamloops), "Decon[tamination] and SCBA procedures [were reviewed] with Members…". It is not clear, however, whether the entire Respiratory Protection Program was reviewed as part of that work. Prince George Fire Rescue, "Monthly Safety Committee Minutes," 14 December 2021, Item 205, Health and Safety Audits, at p. 4.

[32] The need for a separate joint committee (or worker representative) for fire departments is set out in s. 31.3 of Part 31 of the OH&S Regulation.

- Employer representative section: in section 11.03, we would suggest changing the term "administrative representative" to "employer representative" (to better track the WCA language) and stipulate that such individuals must be selected from "from among persons who exercise managerial functions for the employer," as required by section 35 of the WCA.

- Selection and role of Co-Chairs: Part 11 could better describe the selection of the worker representative co-chair, as required by subsection 33(d) of the WCA. Each co-chair should have the same rights (e.g., to call a special meeting), and the possibility of having the worker representative chair the meeting should not be precluded by the OH&S Program (as is done in section 11.03).

- Functions of the Committee: in section 11.06, we would recommend amending this section to expressly track the language in section 36 of the WCA, which sets out the duties and functions of a joint committee.

- Agendas and Minutes: in section 11.09, a requirement that the minutes for at least the last three meetings be posted at each fire hall should be added, as required by section 44 of the WCA (along with the names of the committee members and any orders issued by WorkSafe BC). We would note that the 2021 OH&S process review conducted by the Department identified that the fire hall Safety Boards had not been kept up to date.[33]

We also would recommend adding new sections in Part 11 addressing the training requirements for Joint Committee members (which were added for new members in section 3.27 of the OH&S Regulation effective in 2017; the requirements for existing members are found in section 41 of the WCA), along with the requirement for an annual review of the Joint Committee's operations. We would note that the Department does in fact provide training opportunities for Joint Committee members (somewhat interrupted by the pandemic), and is doing its annual joint committee review using the template provided by WorkSafe BC, as evidenced by the Joint Committee minutes. Nevertheless, it would be useful to set out these requirements in the Part 11 of the OH&S Program.

In addition, the role of worker representatives on the Joint Committee in accident investigations should be better reflected, either in Part 11, or in Part 10 "Investigations of Workplace Incidents and Disease." Their responsibilities are identified in the WCA and relevant regulations (e.g., see subsection 36(i) of the WCA).

We reviewed joint committee minutes covering the period from January 2020 – April 2022, as well as the relevant OGs relating to the Department's OH&S obligations. Early in the pandemic, it appears that two of the monthly joint committee meetings were postponed (March and April 2020); and subsequently, the June 2021 and January 2022 meetings appear to have been put

[33] Prince George Fire Rescue, "Monthly Safety Committee Minutes," 14 December 2021, Item 205, Health and Safety Audits, at p. 4.

off, but otherwise the committee continued with its regularly scheduled monthly meetings throughout the period.

The Joint Committee does a generally good job of tracking matters that are brought before it, and following up on matters to completion. During the period reviewed, the Department had relatively few time-loss injuries, and recorded only two material near misses. One set of matters that could be better represented in the Joint Committee minutes is the results of the regular reviews of the fire halls and other Department facilities. Even if these reviews did not identify any concerns, the fact that the review was undertaken should be recorded and tracked.

Where the Joint Committee is undertaking the annual review of its own processes, the results of that review need to be recorded in the minutes, including any feedback from the Joint Committee members, as required by subsection 3.27(6) of the OH&S Regulation. We would suggest the Department consider attaching the review document as an appendix to the relevant meeting minutes.

The Department is covered by the City's "Respectful Workplace Program", and has undertaken an active approach to mental health and wellness of its members: mental wellness issues are regularly considered by the Joint Committee and constitute a separate part of the overall OH&S program.

We would note that the Department clearly takes its occupational health and safety obligations seriously and is operating its program and Joint Committee in a professional and effective manner. Most of the concerns raised above relate to form rather than substance.

5.4 Recommendations

#5-1: Consider updating Bylaw No. 8272.

#5-2: Revise/update the OH&S program based on the discussion in this section.

6.0 Fire Underwriters

This section examines the role and importance of Fire Underwriters' reviews for property owners in a fire protection area and provides a brief overview of the methodology that those surveys employ. As the rating provided by the Fire Underwriters materially impacts insurance costs for both residential and commercial properties, it is important to understand how the rating system operates and the potential impact it has on the cost-benefit analysis of local governments investing in their fire services. In particular, it is important to understand how investing in the fire service through civic taxes, to establish, maintain or improve an area's rating from the Fire Underwriters, can potentially result in a net return (or the maintenance of major net savings) for residents and area businesses.

The Fire Underwriters are a national organization administered by Opta Information Intelligence. It has operated under a variety of names in the past (including SCM Risk Management Services Inc.), but in each instance, the organization was, and we believe remains, owned or controlled by the insurance industry.

The primary purpose of the Fire Underwriters is to establish the Dwelling Protection Grade ("DPG") and Public Fire Protection Classification ("PFPC") for each community in the country. The DPG rating generally applies to single family detached residences,[34] whereas the PFPC rating applies to multi-family residential, commercial, industrial and institutional buildings or districts, and generally is applied by the "commercial lines" arm of the insurance industry.[35]

Most residential homeowners and businesses carry fire and general perils insurance, and any person with a mortgage is required to maintain such insurance by the mortgagee bank or financial institution. Entities responsible for strata developments are required by provincial legislation to maintain insurance coverage.

Where a community has a fire department that meets Fire Underwriters' standards for performance, the cost of insurance can be significantly decreased. Thus, one of the cost-benefit analyses that underpins the investment required to establish or maintain a rated fire department is the trade-off between the taxes needed to pay for the department (and meet Fire Underwriters' standards) and the expected savings for residents and businesses on insurance costs.

With a well-rated fire department, the aggregate savings on insurance premiums often will offset, in whole or in significant part, the costs of operating the department. For an individual

[34] Under the Fire Underwriters' definitions, the DPG ratings generally apply to the following: "One- and Two-Family Detached Dwellings (buildings containing not more than two dwelling units) in which each dwelling unit is occupied by members of a single family with not more than three outsiders, if any, accommodated in rented rooms." In addition, under this system a "typical" detached dwelling is a maximum of 3,600 square feet in size. Fire Underwriters Survey website, "Terms of Reference", http://www.fireunderwriters.ca/dwelling-protection-grade.html accessed on 19 October 2021.

[35] Fire Underwriters Survey website, "What is the PFPC" at http://www.fireunderwriters.ca/public-fire-protection-classification.html, accessed on 19 October 2021.

with a house that is assessed at a replacement cost[36] for insurance purposes of $300,000, a "protected" or "semi-protected" rating will generally result in cost saving on insurance of between more than $2,000 annually. For commercial properties, significant reductions in insurance rates can be expected when the community obtains a PFPC rating of 7 or better. From the savings enjoyed on insurance, the tax cost of maintaining the service would then need to be deducted to determine the net direct financial benefit (or cost) of having a "rated" department.[37]

The following table is often shown in some Fire Underwriters' reports. The table shows the amount by which "average" insurance costs drop for residential properties as the DPG rating improves: [38]

Table 2: DPG Rating—Estimated Insurance Costs

Replacement Value $	Unprotected Rate $		Semi Protected Rate $		Fully Protected Rate $
100,000	1,165	60± % Reduction	465	32± % Reduction	315
125,000	1,470		585		400
150,000	1,750		700		475
175,000	2,040		815		555
200,000	2,710		1,215		739
250,000	3,290		1,475		893
300,000	3,880		1,741		1,053
350,000	4,422		1,987		1,201
400,000	4,953		2,226		1,349
450,000	5,489		2,465		1,491

Table 2, while somewhat dated in that it refers to average insurance costs from ~2015, is still useful in showing the material savings that result from having a semi- or fully-protected rating from the Fire Underwriters.

[36] It is important to emphasize that "replacement cost" and the "assessed tax value" of a home are not interchangeable concepts. Replacement cost is driven by square footage, level of finishing and the cost of construction, while the assessed tax value of a home is driven by market factors.

[37] The rating system is described in greater detail in the next section. It must be stressed that the actual cost of insurance for any homeowner or business varies based on a number of individual and site-specific factors. While the Fire Underwriters' fire grading for the area has a significant impact, a host of other considerations are also involved in the setting of insurance rates, including matters specific to the individuals or properties involved, or the competitive forces at work in the region.

[38] This table is drawn from a 2015 Fire Underwriters' report. While the estimated rates are now low (as insurance costs have risen since that time), the approximate cost savings are still enjoyed.

The savings achieved for commercial and multi-family properties comes from the Department's PFPC rating. The table below shows the estimated savings as the rating improves:[39]

Table 3: PFPC Rating—Estimated Insurance Cost Decreases

Public Fire Protection Classification	U- Rate Percentage Decreases
PFPC 10 to PFPC 9	99.2%
PFPC 9 to PFPC 8	96.6%
PFPC 8 to PFPC 7	82.4%
PFPC 7 to PFPC 6	74.4%
PFPC 6 to PFPC 5	63.1%
PFPC 5 to PFPC 4	53.8%
PFPC 4 to PFPC 3	48.0%
PFPC 3 to PFPC 2	47.3%
PFPC 2 to PFPC 1	45.8%

As can be seen in Table 3, ratings improvements in the commercial classification do not result in linear decreases. From a cost-benefit perspective, moving a rating from PFPC 8 down to ~PFPC 4 seems to provide the optimal savings for businesses and multi-family properties. That non-linear relationship is worthy of consideration on a cost-benefit analysis between the amount required to be invested in improving the service and the expected insurance savings for owners of commercial, industrial and multi-family properties.[40] Below PFPC 4, the amount of investment needed to obtain the improved rating may well outweigh any insurance savings.

The City and Department were last formally reviewed in 2013, at which time the following ratings were given:[41]

Table 4: 2013 Fire Underwriters' Ratings for the City

Sub-District	Rating	Comment
PFPC Rating		
Halls 1 – 4	PFPC 5	Properties within 150 m. of a hydrant & within 5 km. of a fire hall
Halls 1 – 4	PFPC 9	Properties within 5 km. of a fire hall but more than 150 m. from a hydrant
Halls 1 – 4	PFPC 10	Properties more than 5 km. from a fire hall

[39] Again, this table is drawn from a 2015 Fire Underwriters' report.

[40] The amount of savings can also vary with the particular type of industry or commercial undertaking. The table gives the average of all savings, across all property types and uses.

[41] Fire Underwriters Survey, *City of Prince George: Fire Protection Services Study – Final* (2013), at pp. 8 – 9 (the "2013 FUS Report")

Sub-District	Rating	Comment
DPG Rating		
Halls 1 – 4	DPG 1	Properties within 8 km. of a fire hall and within 300 m. of a fire hydrant
Halls 1 and 2	DPG 4	Properties within 8 km. of a fire hall but not within 300 m. of a fire hydrant
Halls 3 and 4	DPG 3B	Properties within 8 km. of a fire hall but not within 300 m. of a fire hydrant
Halls 1 – 4	DPG 5	Properties more than 8 km. from a fire hall

In the 2013 FUS Report, the Department's PFPC rating fell from its previous 1985 rating, dropping from PFPC 4 to PFPC 5. This report was reviewed in detail in the 2016 SOC Report prepared by the Consultants. At the time, we pointed out several mathematical errors in the report, and noted that, from the perspective of improving the Department's overall score, focussing on improving the score in the Fire Department category would yield the best results. That 2016 SOC Report should be consulted for a detailed review of the 2013 FUS Report and the Fire Underwriters' methodology.

The Department persuaded the Fire Underwriters to delay implementing the proposed PFPC downgrade, while it undertook the standards of cover review in 2015-16. In 2020, the Department set out a detailed submission on the improvements that had been implemented in response to the 2013 FUS Report, and in connection with the Standards of Cover Report.[42] The Fire Underwriters indicated that the additional information had been assigned to one of their surveyors for processing, and an update was expected by the end of 2020.

The improvements noted in the submitted documentation covered 12 of 14 recommendations from the 2013 FUS Report regarding the fire department assessment (all except the staffing and annual report recommendations).

Table 5: PGFR Response to 2013 FUS Recommendations

2013 FUS Report Recommendation		PGFR Response
1	Improve coverage within CPG	New Number 1 Fire Hall, currently under construction, located at 2012 Massey Drive, has an estimated completion date of fourth quarter, 2020. **[Now completed.]** The new Number 1 Fire Hall should improve the 8-minute response coverage footprint by 48% (Mitchell & Associates, 2016 fire hall location study).

[42] Correspondence, Deputy Chief P. Knudsgaard, PDFR to M. Currie, Fire Underwriters, 14 September 2020, with a follow up on 16 October 2020.

2013 FUS Report Recommendation		PGFR Response
2	Improve Ladder coverage within CPG	Additional 75' Quint apparatus entered service in 2017. PGFR now has two staffed ladder trucks available to respond at all times.
3	Consider additional Fire Hall in BCR/Danson/ Prince George airport area	See Rec 1 (addressed, in part, by re-locating Hall 1).
4	Conduct a Standard of Response Coverage study	Standard of Response Coverage Study was completed in 2016.
5	Improve Pump Testing Program	Pump testing was completed in July 2020 and will be conducted based on NFPA standards going forward.
6	Consider additional staffing - add an additional on-duty company available to respond 24/7	Staffing has not increased since 2013 FUS
7	Improve Callback System - utilize cell based call back system	Callback system has been improved, utilizing a cell based texting call back system for off duty Firefighters. The callback system is scheduled to be further improved in 2020 utilizing a Telestaff automated software phone call and text system.
8	Integrate Training Program Database	A training database (FDM/RMS) is now developed and is used to assign and confirm that firefighters have completed assigned training.
9	Work with large scale industry sites to develop clear understanding of the risk levels for these sites	Under Prince George Industrial Mutual Aid Committee ("PGIMAC"), Prince George Fire/Rescue is working with large scale industrial sites through training events and ongoing meetings to further develop an understanding of the risk levels for these sites. Pre-Incident plans for all these sites have been completed or are currently under development.
10	Prepare Annual Report	Currently in planning phase.
11	Replace Fire Hall 1	Fire Hall 1 replacement currently under construction, estimated completion date: Fourth quarter 2020 **[Now completed]**

2013 FUS Report Recommendation		PGFR Response
12	**Upgrade Fire Hall 2**	Living quarters have been upgraded - washrooms, bedrooms, office, all renovated. Backup power is provided for communication equipment and emergency lighting.
13	**Upgrade Fire Hall 3**	Safety of working/living environment upgraded - modern emergency lighting and exit signage installed. Backup power is provided for communication equipment and emergency lighting.
14	**Upgrade Fire Hall 4**	Safety of working/living environment upgraded - modern emergency lighting and exit signage installed. Backup power is provided for communication equipment and emergency lighting.

The Department also detailed its and the City's response to the other recommendations regarding emergency communications, fire prevention and water supply system improvements. Significant progress against most of those recommendations was evident in the material submitted to the Fire Underwriters in 2020.

6.1 Summary

The principal benefit of having an effective, well-equipped and well-trained fire department is that it will materially improve the life safety of residents in its fire protection area. Indeed, we would stress that the life-safety issues are the principal ones to focus on, when communities examine the benefits and weigh the costs of investing in their fire services. From a financial perspective, however, it also is important to understand that a fire department which is well rated by the Fire Underwriters will likely result in materially reduced insurance costs for both residential and commercial property owners.

The Department has achieved the best possible rating for residential properties, and through a series of improvements since 2013, retained its PFPC 4 rating for commercial, industrial, institutional, and multi-family properties.

7.0 Response Analysis

The Department responded to a total of 55,937 incidents between 1 January 2014 and 31 December 2022.[43] The response data are provided from the computer aided dispatch (the "CAD") software used by the Fire Operations Communications Centre (the "FOCC"). The FOCC, which is staffed by members of the Department, also provides call taking and dispatch services for fire departments in the Regional District of Fraser-Fort George, the Kitimat Stikine Regional District, the Regional District of Bulkley Nechako, Regional District of Central Kootenay and the Cariboo Regional District. The following sections will include a review of the Department's responses by time as well as by incident type and by location and where possible will provide an assessment of any trends. The following sections will also review options for a new training site, a fifth fire hall and staffing requirements.

7.1 Temporal Analysis

7.1.1 Responses By Year

Responses by the Department are summarized in Table 6. There is noticeable variance by year, with the lowest annual number of responses in 2020 followed by the highest occurrence in 2022. This variance is largely related to the impact of the pandemic coupled with resultant changes in the dispatch transfer policy by BCEHS, followed by a resurgence in calls in 2021 and 2022, including a spike related to the Heat Dome in late June/early July 2021.

Table 6: PGFRS Responses, 2014 to 2022

Year	Count
2014	5,481
2015	5,530
2016	5,805
2017	6,500
2018	5,873
2019	5,496
2020	4,475
2021	7,569
2022	9,208
Total	55,937

[43] The CAD also records additional dispatch transactions which include notification of other service providers, test signals for continuity checking purposes, etc. These transactions do not create a response by the Department's personnel and apparatus, so they are not part of this analysis.

These data are illustrated in Figure 1 with the noticeable dip to 4,475 responses in 2020 followed by a recovery to 9,208 in 2022. There has been a 67% increase in responses since the Department's last review in 2015.

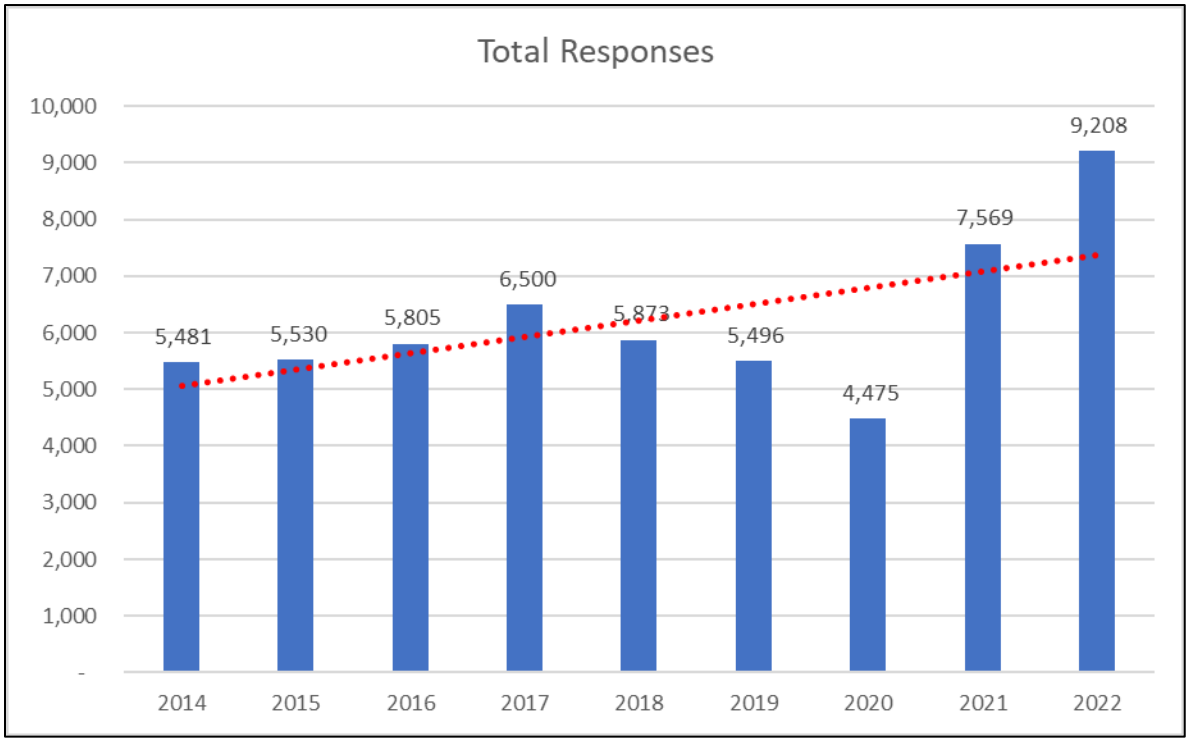

Figure 1: PGFRS Responses, 2014 to 2022

7.1.2 Medical Responses Only by Year

The decline in total responses in 2020 was largely due to changes in BCEHS response protocols during the first wave period of the pandemic – basically, from the end of March 2020 through to about September. The graph in Figure 2 illustrates the response data filtered to show medical responses only: The drop in calls and then the recovery is remarkable.

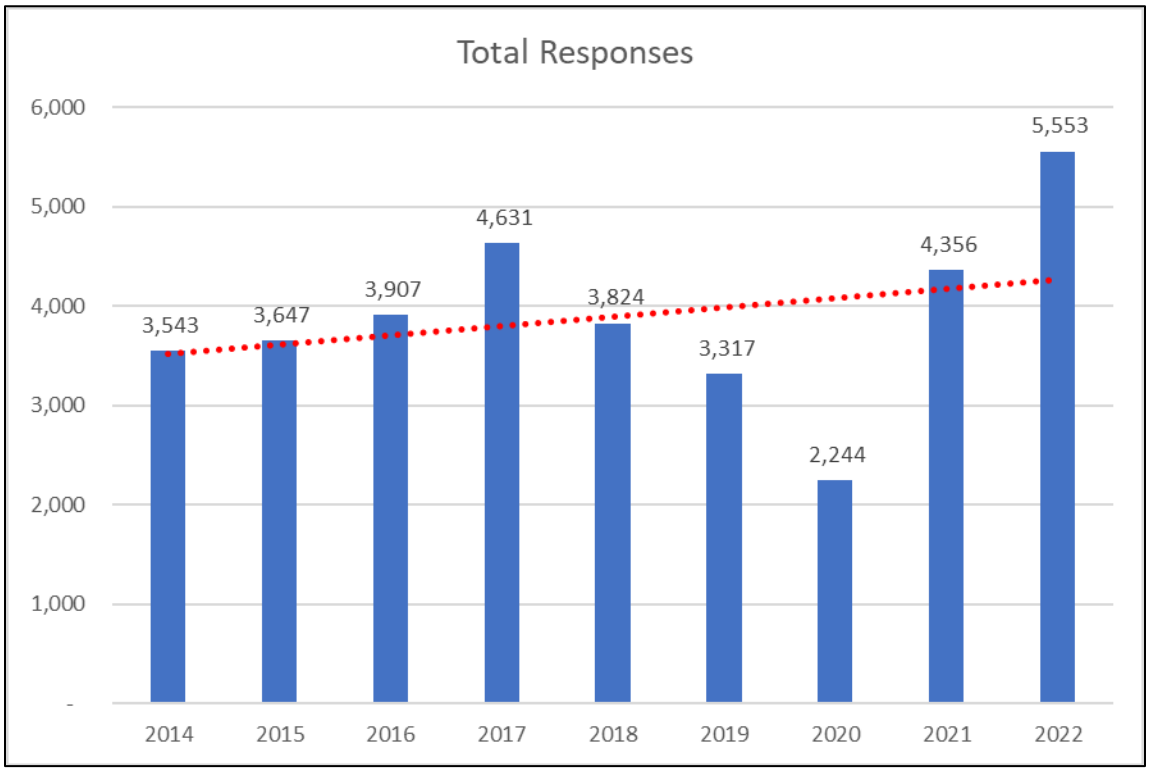

Figure 2: PGFRS Medical Responses Only, 2014 to 2022

Historically, BCEHS has unilaterally determined which call types and under what circumstances fire department assistance will be requested. The response protocols have materially changed three times over the course of the past decade. In addition to the significant change in 2020 in response to the pandemic, the protocols were changed twice:

- first, in 2013, when changes to what was then-called the "Resource Allocation Protocol" or "RAP", downgraded certain call types, and BCEHS stopped requesting fire department assistance for a range of incidents. These changes, however, appear to have been short-lived in practice. The 2016 SOC Report notes a drop in FMR calls in 2013, with some recovery in 2015. The number of calls then escalated significantly from 2015 through 2017 as shown in Figure 2, above;[44] and

[44] While the cause of this escalation is not entirely clear, it may have been driven by BCEHS resource shortages during this period.

- more significantly, the RAP was replaced by a new “Clinical Response Model” or “CRM” with effect as of 30 May 2018. In addition to moving to a colour-coding system to indicate call priority, the new CRM materially reduced the number incidents to which fire departments would automatically be dispatched. Only the highest severity incidents (purple and red) now involve automatic dispatch by participating departments, with lower-coded events only triggering a fire department response if there are material delays in ambulance arrival or some other circumstance (e.g., access issues, lift assist requirements, hazardous materials present, etc.) where fire department assistance is required. The new CRM led to a 17.4% drop in the Department’s FMR calls in 2018, and a further, drop in 2019, which fell about 13.3% compared to the previous year. As such, there was more than 1300 fewer FMR calls in 2019 compared to 2017.

As can be seen in the 2022 data, however, the call volumes have now returned to above the levels seen prior to the introduction of the new CRM.

This externally driven change in demand for the Department’s services is challenging to manage, and makes forward planning difficult.

7.1.3 Medical Response by Year and Month, 2019 to 2022

The response protocol changes were made at the end of March 2020 and the sudden impact of the change is shown below in Figure 3 with the total responses falling from 271 in March to 61 in April. The protocols appear to have been reversed by September, with volumes rising significantly in the final quarter of the year. In 2021 the rate of medical incidents climbed again, beginning with the Heat Dome in late June, and continuing through the balance of the year and into 2022 (notwithstanding that the CRM itself was not materially revised).

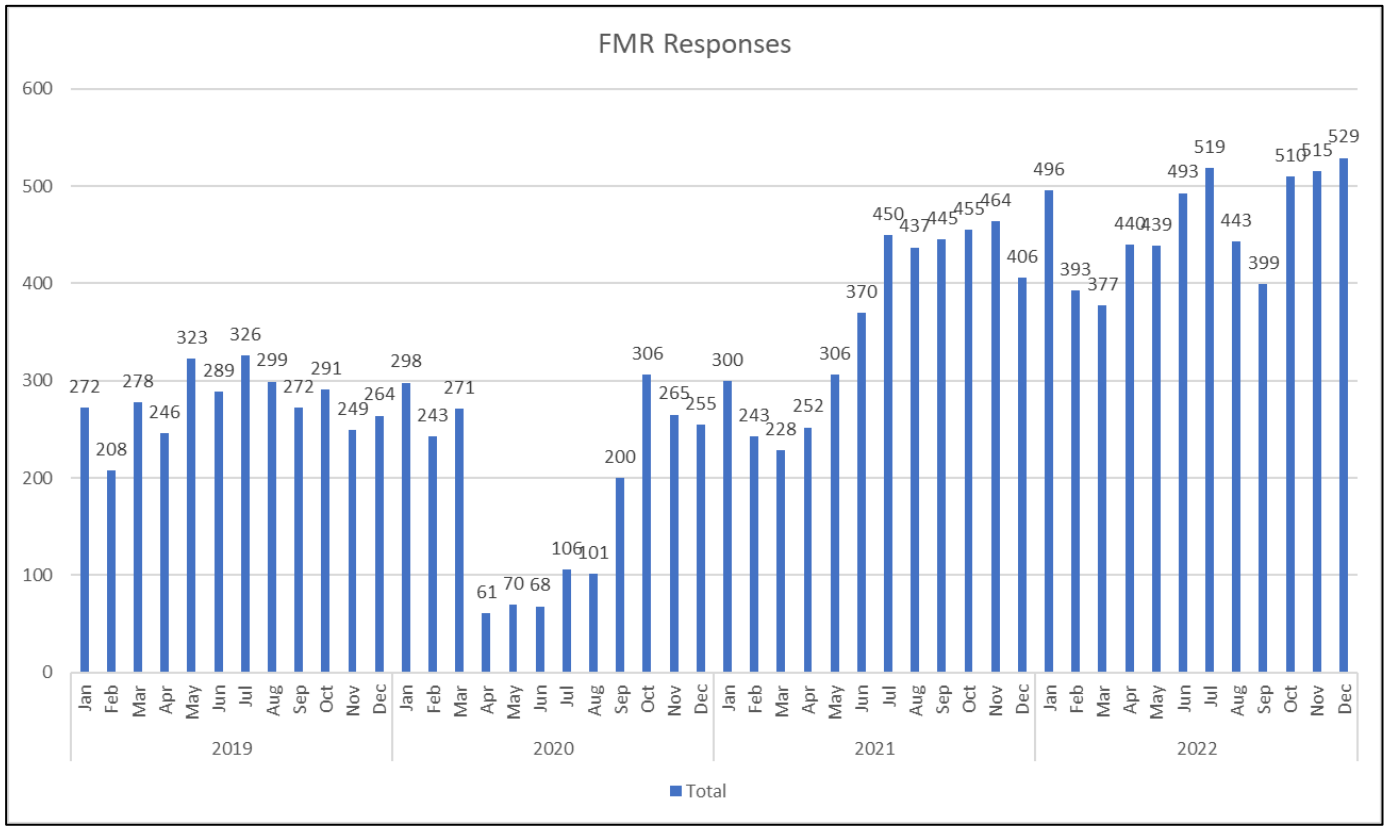

Figure 3: PGFRS Medical Response Only, 2019 to 2022

7.1.4 Responses By Month

Incidents by month are listed in Table 7 indicating the busiest month for the Department is October followed by July, December and May.

Table 7: PGFRS Responses by Month, 2014 to 2022

Month	Count
January	4,711
February	4,061
March	4,250
April	4,424
May	4,887
June	4,374
July	5,031
August	4,690
September	4,624
October	5,063
November	4,799
December	5,023
Total	**55,937**

These data are shown graphically in Figure 4 and illustrate a considerable range in requests for service on a monthly basis.

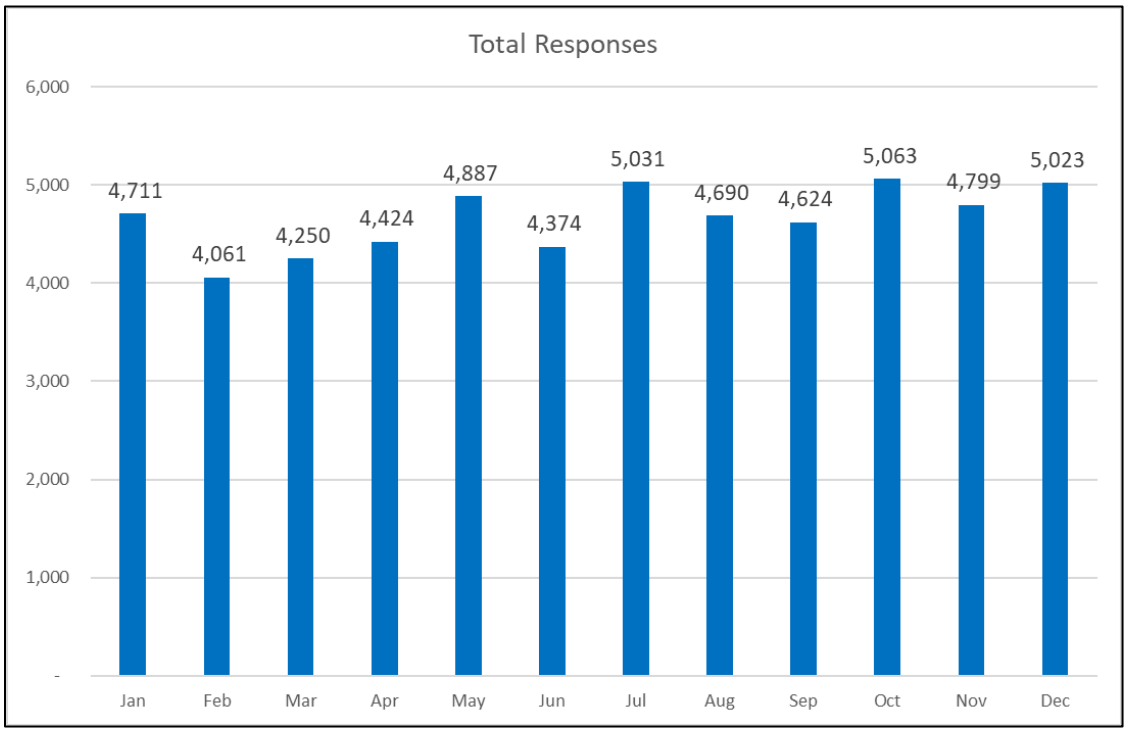

Figure 4: PGFRS Responses by Month, 2014 to 2022

7.1.5 Responses By Day

The number of incidents responded to by day of the week is listed in Table 8, with the busiest day being Friday and the lowest call volume occurring on Monday. The variation from the busiest (8,437) to the quietest day (7,593), however, is 11%, meaning that the Department is consistently busy across the week.

Table 8: PGFRS Responses by Day of the Week, 2014 to 2022

Day	Count
Sunday	7,593
Monday	7,720
Tuesday	7,822
Wednesday	8,086
Thursday	8,251
Friday	8,437
Saturday	8,028
Total	**55,937**

These data are shown in Figure 5 with the busiest two days being Friday, then Thursday.

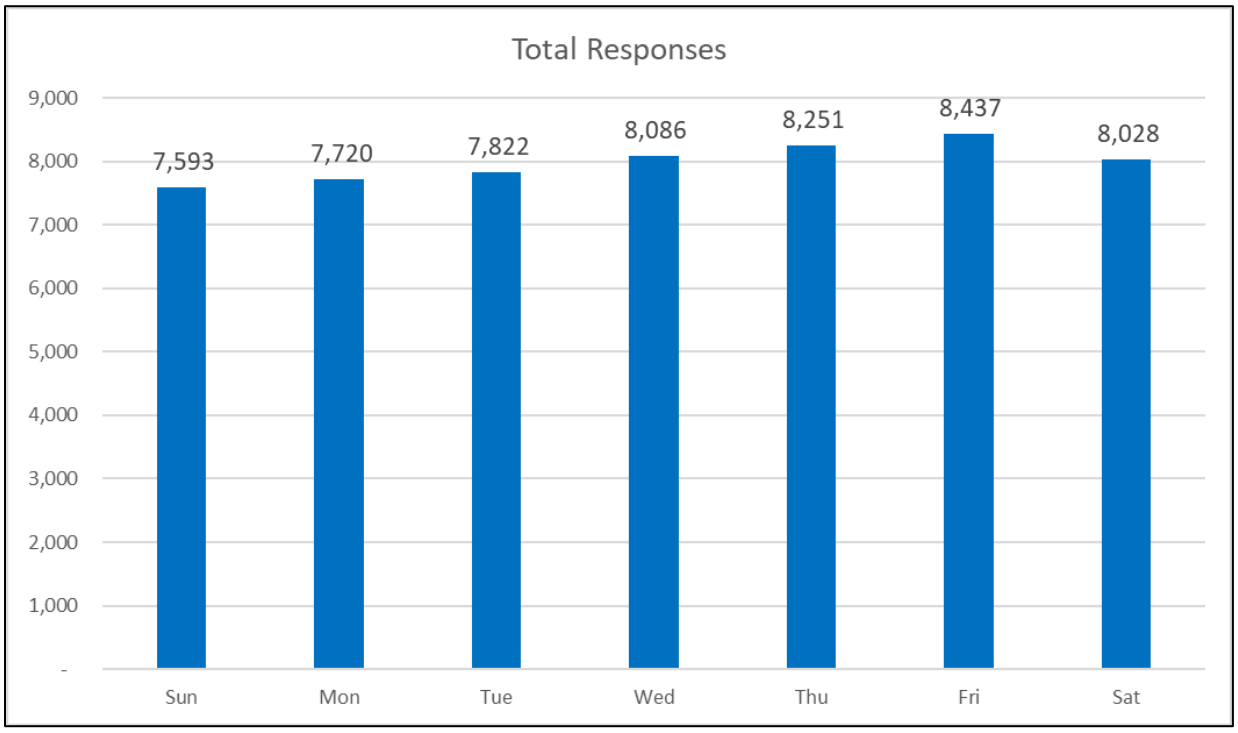

Figure 5: PGFRS Responses by Day of the Week, 2014 to 2022

7.1.6 Responses By Hour of the Day

Responses by hour of the day are listed in Table 9, which shows a wide range in the number of total responses from a low of 1,079 in the hour starting at 04:00, to a peak of 3,354 in the hour starting at 17:00 –triple the quietest hour. The variation is reasonably common – with early morning hours being the quietest, though the busiest hour tends to vary by department, with some peaking earlier than PGFRS.

Table 9: PGFRS Responses by Hour, 2014 to 2022

Hour	Incidents
00:00	1,649
01:00	1,474
02:00	1,331
03:00	1,202
04:00	1,079
05:00	1,147
06:00	1,347
07:00	1,786
08:00	2,175
09:00	2,444
10:00	2,709
11:00	2,898

Hour	Incidents
12:00	2,935
13:00	3,061
14:00	3,073
15:00	3,045
16:00	3,288
17:00	3,354
18:00	3,140
19:00	2,904
20:00	2,839
21:00	2,717
22:00	2,360
23:00	1,980
Total	55,937

The large variability in responses is demonstrated in Figure 6 below which shows how responses begin to rise from mid-morning and are sustained until late evening, with the highest call volume between 14:00 and 19:00.

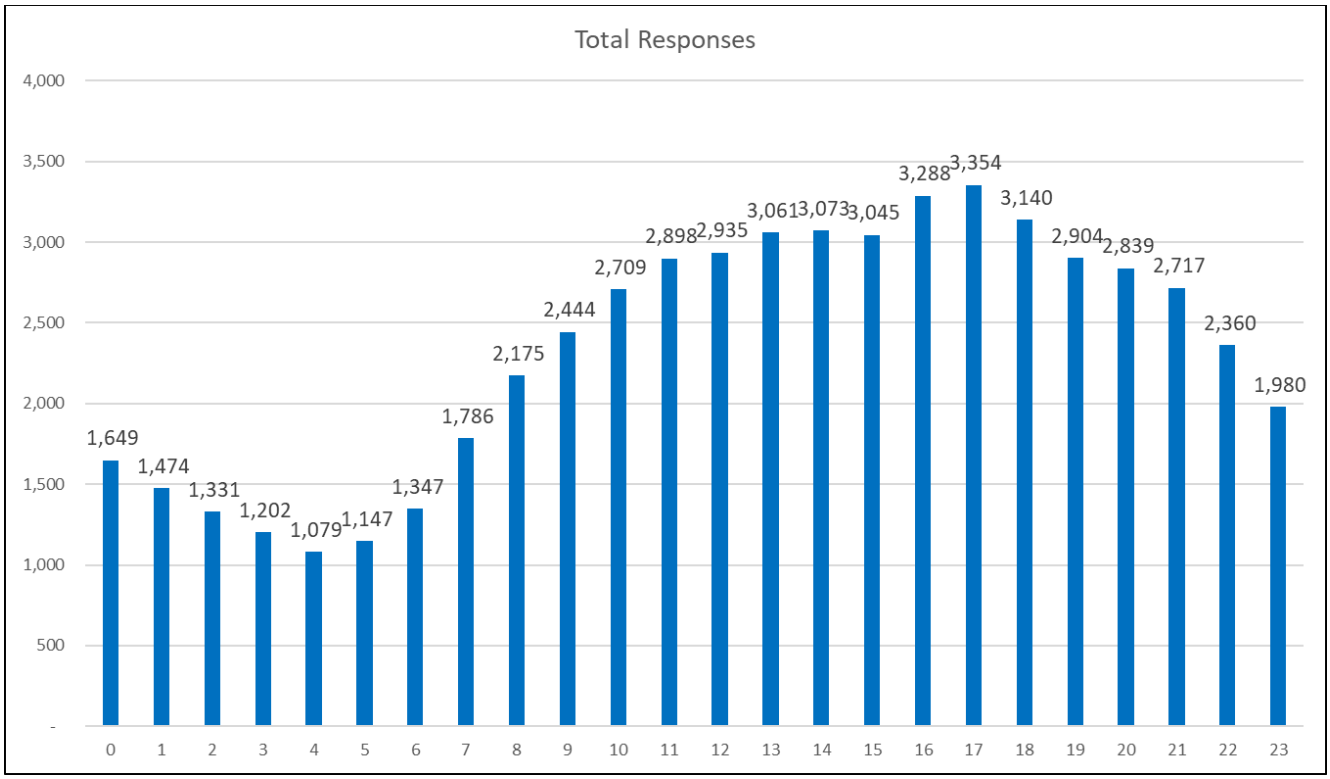

Figure 6: PGFRS Responses by Hour 2014 to 2022

The variability by year, month, day and hour can be presented in two different views, one showing the variability by year and month, the second showing day of the week and hour. These are shown in the following section and underscore the complexity in the Department's demand for service.

7.1.7 Responses by Year and Month

Table 10 displays the responses by year and month. The variation in call volumes over the period is evident.

Table 10: PGFRS Responses by Year and Month, 2014 to 2022

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2014	450	370	373	437	522	472	553	473	491	450	407	483	5,481
2015	460	392	448	471	535	425	511	437	429	503	419	500	5,530
2016	528	433	471	524	504	456	497	442	444	473	490	543	5,805
2017	500	493	486	508	595	541	634	655	499	503	527	559	6,500
2018	605	551	531	546	631	399	421	484	410	457	380	458	5,873
2019	420	376	475	437	547	467	545	467	439	485	425	413	5,496
2020	482	369	408	247	265	230	321	275	409	522	482	465	4,475
2021	522	449	413	500	557	636	745	719	762	786	771	709	7,569
2022	744	628	645	754	731	748	804	738	741	884	898	893	9,208
Total	**4,711**	**4,061**	**4,250**	**4,424**	**4,887**	**4,374**	**5,032**	**4,689**	**4,624**	**5,063**	**4,799**	**5,023**	**55,937**

There are a few matters that need to be noted from this data set:

- There was a steady rise in call volumes in the four-year period from 2014 to 2017 inclusive. This rise in volume largely (though not exclusively) tracked increases in FMR calls during this period;
- Notwithstanding the significant drop in FMR calls at the end of May 2018 as a result of the introduction of the new CRM by BCEHS, total call volumes in 2018 still exceeded those in 2016. This was partly driven by high FMR call volumes in the early part of the year, but also by a growing volume of non-FMR call volumes – which has proven to be the beginning of a trend that continues through 2022;
- The low call volumes in 2020 need to be treated as anomalous. The drop was driven by FMR volumes that were lower than had been seen at any point in the past decade, as result of unilateral response protocol changes by BCEHS; and
- The almost stunning growth in total call volumes in 2022, which is the Department's busiest year on record.

Indeed, the Department's non-FMR call volumes have risen since 2014, from 1,935 calls to 3,654 calls in 2022 – an increase of some 88% in that nine-year period. That increase in non-FMR calls is particularly evident for the four-year period from 2019 to 2022 inclusive, which saw a steady growth in these call types.

7.1.8 Responses By Day and Hour

These data can also be displayed to show the number of responses by day and hour. The hours with the lowest call volume occur after 23:00 through to 08:00, at which point they rise rapidly, as noted earlier. The call variability across each day is evident in the heat map shown in Table 11.

Table 11: PGFRS Responses by Day and Hour 2014 to 2022

Day	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Total
Sun	266	246	217	218	187	165	187	225	275	289	364	380	369	426	393	428	401	469	402	367	380	351	318	270	7,593
Mon	199	170	168	129	160	162	193	269	332	355	385	405	418	399	423	427	494	488	440	383	375	398	295	253	7,720
Tue	187	203	156	166	149	163	180	257	311	358	380	445	416	452	446	446	467	447	460	380	378	385	334	256	7,822
Wed	233	211	192	148	132	152	207	266	299	353	395	409	411	442	461	454	486	526	420	438	435	402	351	263	8,086
Thu	257	208	175	181	150	179	194	274	360	398	411	398	477	445	449	427	464	477	474	449	402	379	349	274	8,251
Fri	246	202	177	166	137	160	190	263	334	353	427	447	447	483	494	442	505	457	482	440	438	423	377	347	8,437
Sat	261	234	246	194	164	166	196	232	264	338	347	414	397	414	407	421	471	490	462	447	431	379	336	317	8,028
Total	**1,649**	**1,474**	**1,331**	**1,202**	**1,079**	**1,147**	**1,347**	**1,786**	**2,175**	**2,444**	**2,709**	**2,898**	**2,935**	**3,061**	**3,073**	**3,045**	**3,288**	**3,354**	**3,140**	**2,904**	**2,839**	**2,717**	**2,360**	**1,980**	**55,937**

These two data views illustrate the complexity of providing a response capability with a fixed staffing model, one which has not increased in a number of years.

7.2 Spatial Analysis

The Department protects an area of some 381 square kilometres, as shown in Figure 7. This map shows the municipal boundaries and the four fire hall locations, with the distance in kilometres between them. Also shown on this map are distances to the north limit on the Hart Highway, the west limit on Highway 16, and the south limit on Highway 97 as well as the distance to the industrial area, also known as the BC Rail property.

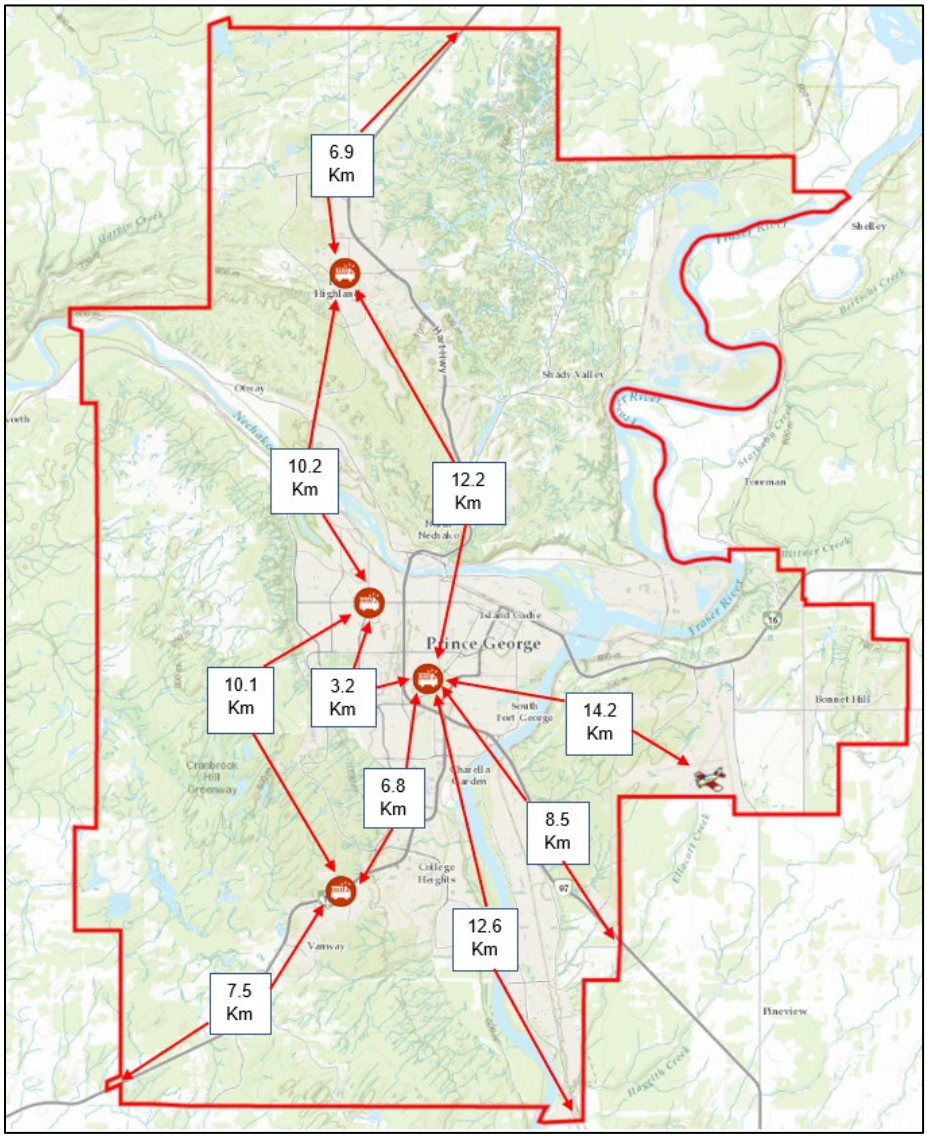

Figure 7: Prince George Municipal Boundaries with Four Fire Halls and Key Distances by Road Network.

Understanding the distances is important as it relates to the Department's ability to provide timely service and to meet the Fire Underwriters' DPG and PFPC requirements, which were discussed in the Fire Underwriters' section, above.

7.2.1 Responses By Fire Hall

The variability in the number and distribution of responses by fire hall response area is complex. The data are summarized in Table 12, which shows that incidents by year have significantly increased. Hall 1 has experienced the largest increase in total call volumes.

Table 12: PGFRS Incidents by Fire Hall Primary Response Area and Year, 2014 to 2022

Year	Hall 1	Hall 2	Hall 3	Hall 4	Total
2014	2,870	1,530	567	514	5,481
2015	2,800	1,575	602	553	5,530
2016	2,903	1,723	600	579	5,805
2017	3,556	1,711	675	558	6,500
2018	3,182	1,488	637	566	5,873
2019	2,974	1,375	630	517	5,496
2020	2,513	1,046	491	425	4,475
2021	4,536	1,694	733	606	7,569
2022	5,409	2,171	914	714	9,208
Total	**30,743**	**14,313**	**5,849**	**5,032**	**55,937**

These data are also illustrated in Figure 8 showing the largest increases being for Hall 1 which, in 2022, had 59% of all responses, while Hall 2 accounted for 23.6%, Hall 3 for 9.9% and Hall 4 for 7.8%. There is, however, an important caveat to these data. They show the total number of calls in the primary response area of each of the four Halls. They do not account for situations where:

- the call was of a nature (e.g., a structure fire) that required responses from the neighbouring halls as well; or
- the units from the particular Hall were already out on a response, resulting the in the call being responded to from one of the three other Halls.

As such, the calls by primary response area do not fully reflect the workloads being experienced by each Hall.

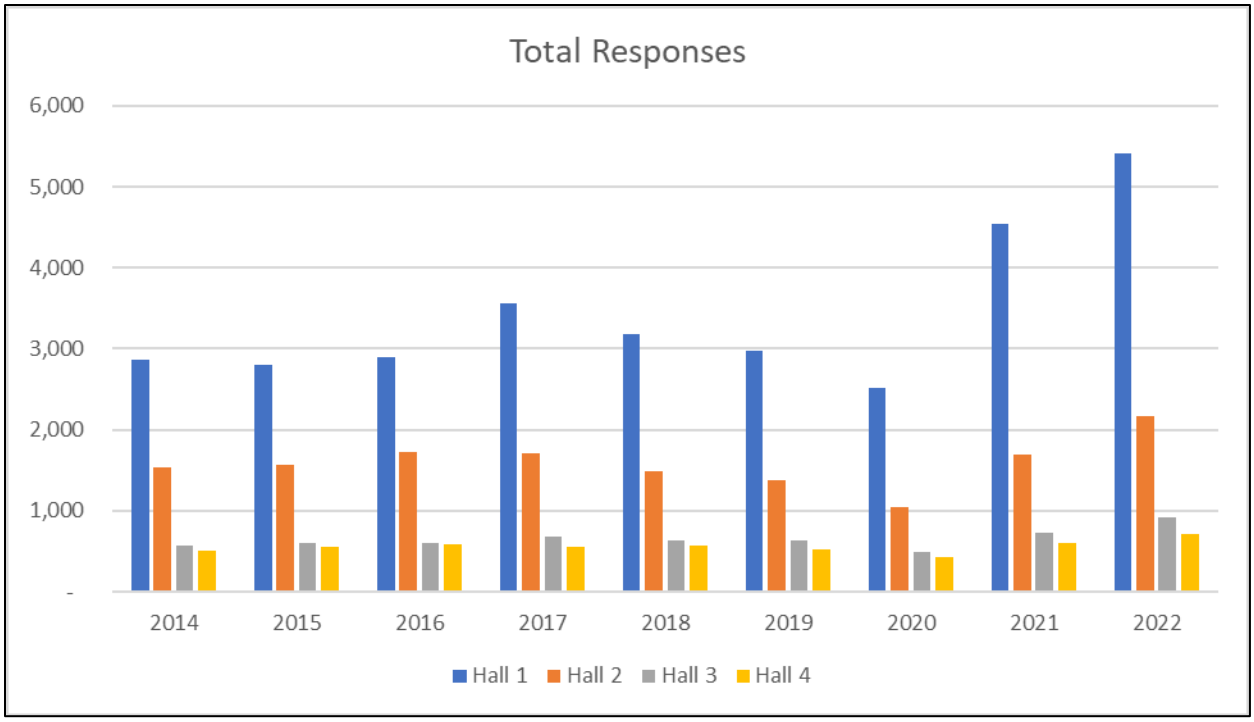

Figure 8: PGFRS Incidents by Fire Hall Primary Response Area and Year, 2014 to 2022

Over the period reviewed, there has also been a shift in the percentage of incidents occurring in the central portion of the City within the primary response areas of Halls 1 and 2. The total number of incidents in these two response areas has risen from 77.1% in 2015 (the year of the previous review) to 79.8% in 2022. These response areas cover the City core, including the downtown. The increase in responses may well reflect the growing challenges related to homelessness, mental health and addiction, which tend to be concentrated in the City core.

Table 13: PGFRS Responses by Halls, 2014 to 2022

Year	Hall 1 and 2	Hall 3 and 4
2014	78.6%	21.4%
2015	77.1%	22.9%
2016	77.5%	22.5%
2017	79.8%	20.2%
2018	79.5%	20.5%
2019	79.1%	20.9%
2020	79.5%	20.5%
2021	82.3%	17.7%
2022	79.8%	20.2%

It should be noted that the number of incidents occurring the primary response zones of Halls 3 and 4 are also increasing, rising from 1,081 in 2014 to 1,628 in 2022. The rate of increase, however, is slower than that being experienced in the two other response zones.

7.2.1.1 Responses to Structure Fires

Structure fires are the incident type which requires a response from the largest number of personnel and apparatus. Figure 9 is a spot map showing their distribution across the City. Again there is a concentration of such calls in the downtown core.

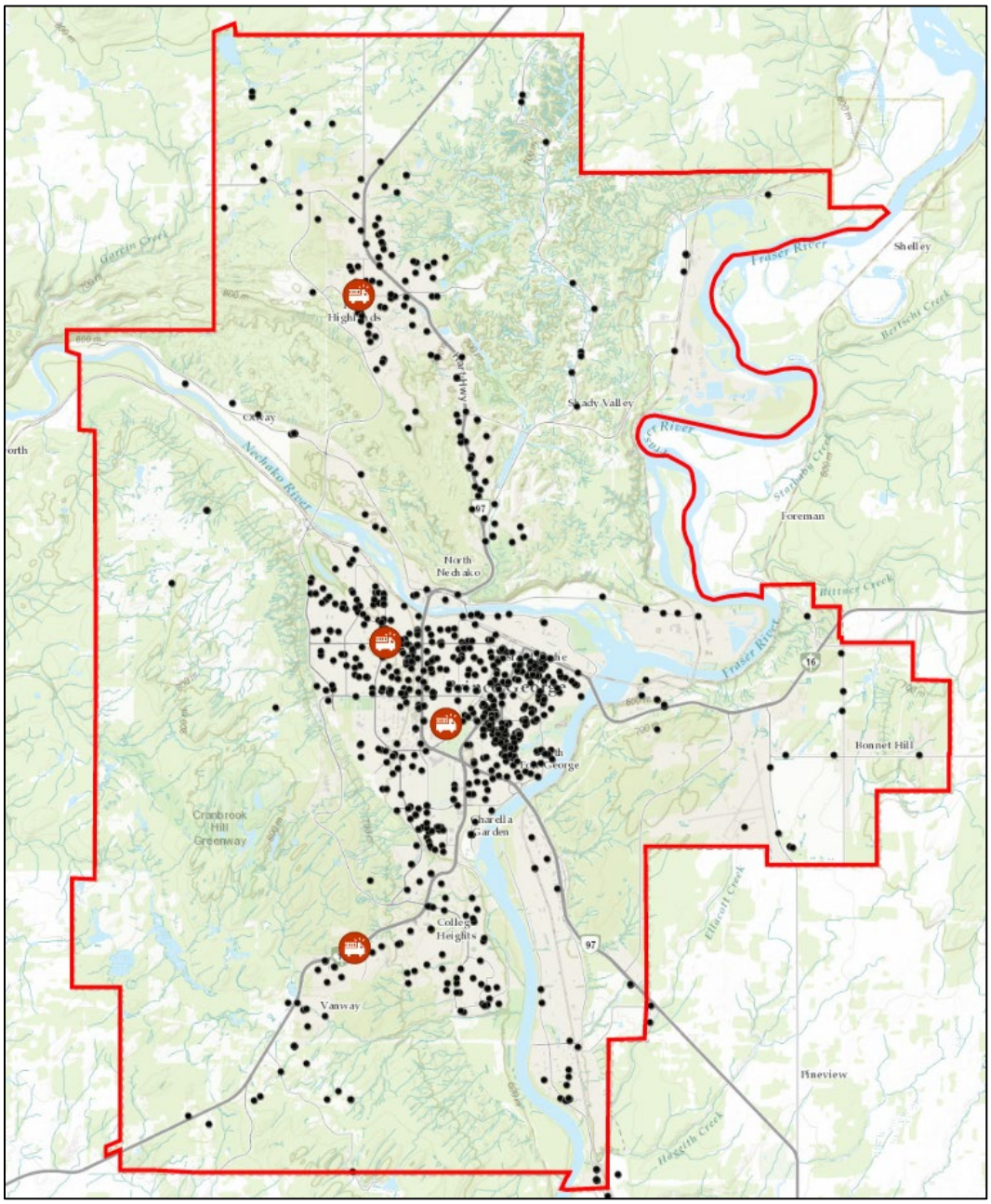

Figure 9: Structure Fires, 2014 to 2022

These data can also be displayed in a ‘heat map’ as shown in Figure 10.[45]

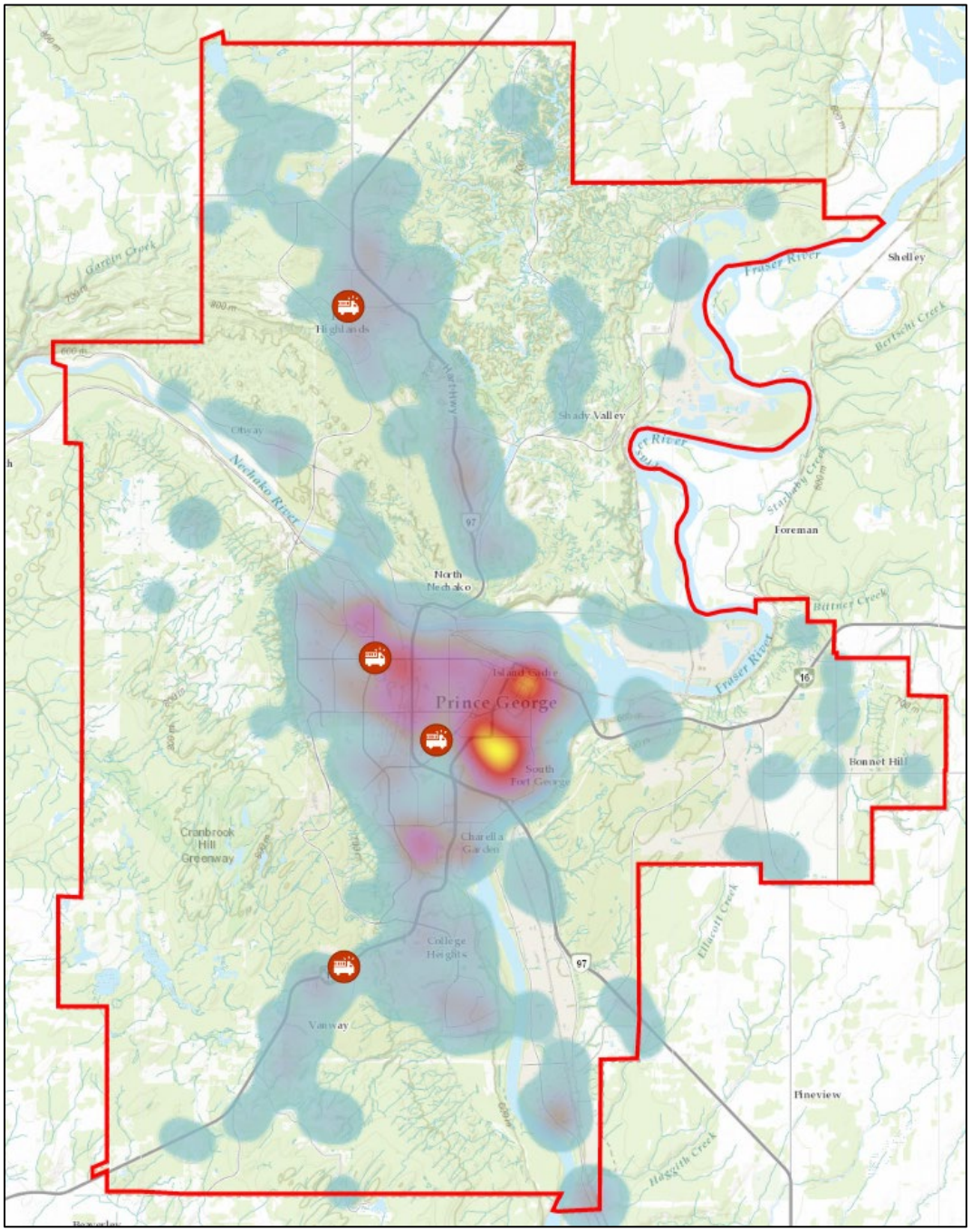

Figure 10: Structure Fires as a Heat Map, 2014 to 2022

This type of mapping clarifies that the area of the highest concentration of structure fires is within the central core of the City, with the highest concentration in the area immediately east of Hall 1.

[45] The heat maps were generated for this report using ESRI mapping software.

7.2.2 Responses to Hazardous Materials Calls

The Department's responses include attending hazardous materials calls throughout the protection area including attendance at one or more of the high-risk industrial sites in the City. Hazardous materials ("hazmat") incidents during the period of this review are shown in Figure 11, with a concentration of these in the core area.

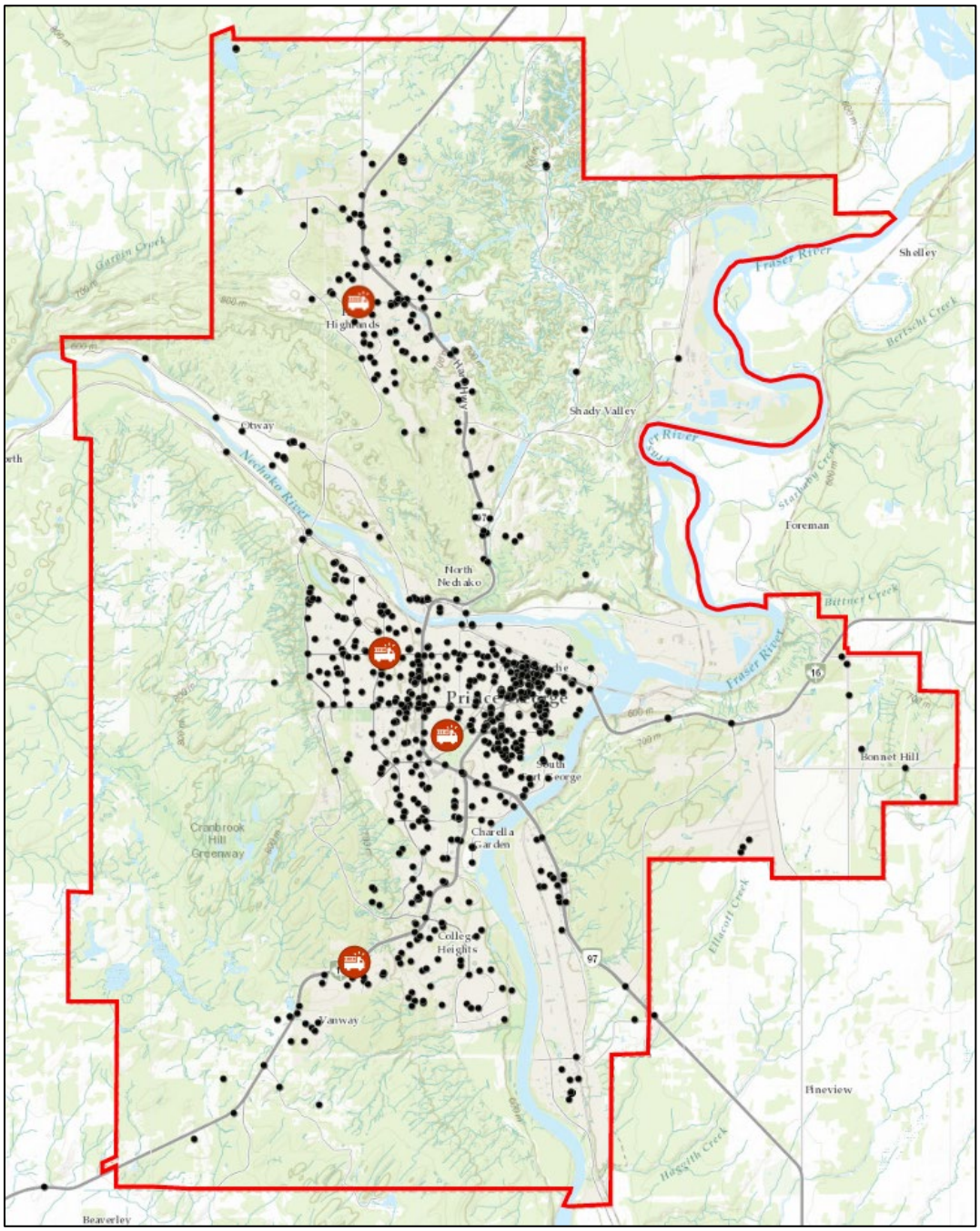

Figure 11: Hazmat Incident Locations, 2014 to 2022

Similar to the previous example with structure fires, these responses can be portrayed as a heat map (Figure 12) to more accurately show the concentration of such incidents.

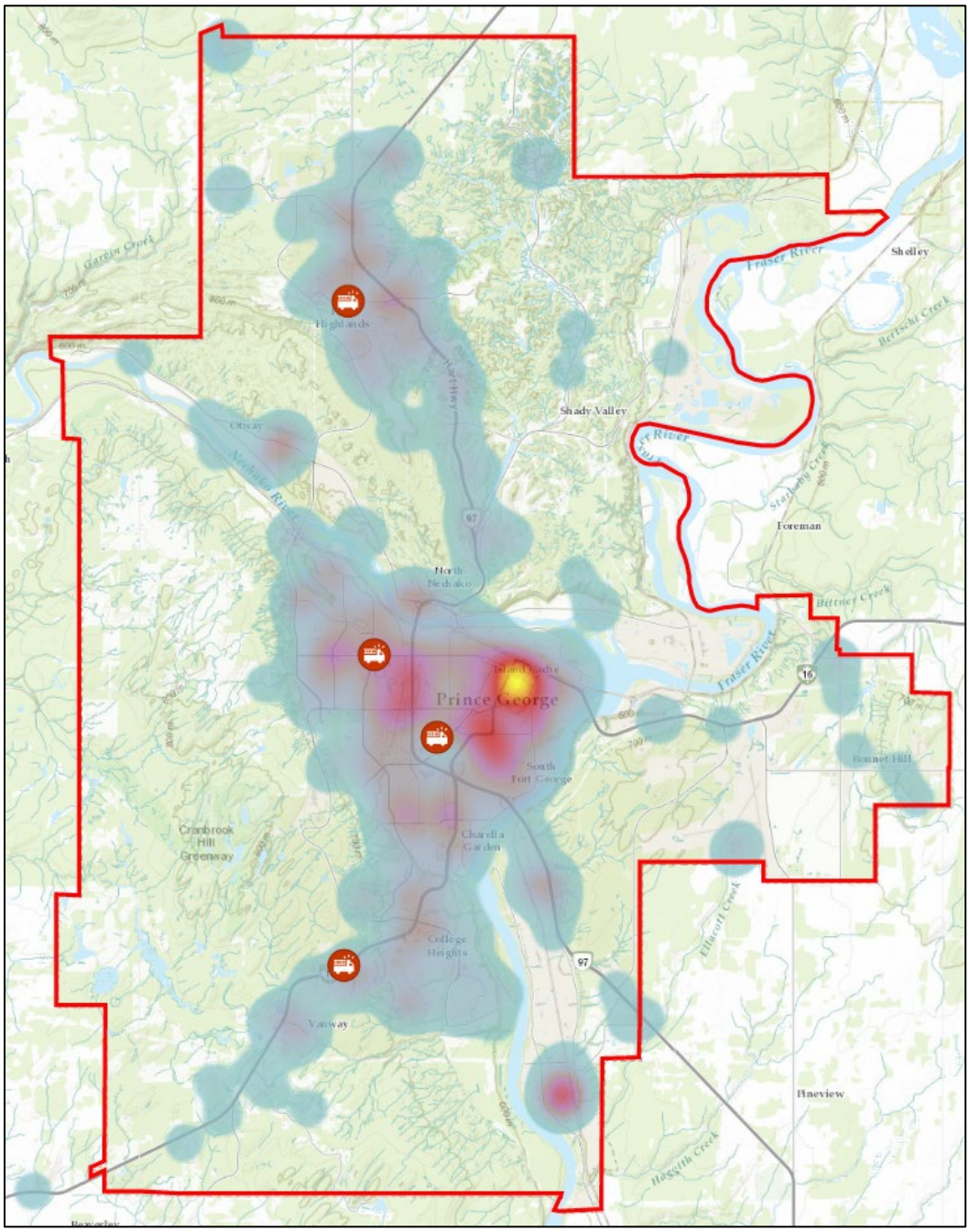

Figure 12: Hazmat Incidents as a Heat Map, 2014 to 2022

7.2.3 Responses to Alarm Activations

Responses to alarm activations are the third highest response type for the Department. This call type is displayed in Figure 13.

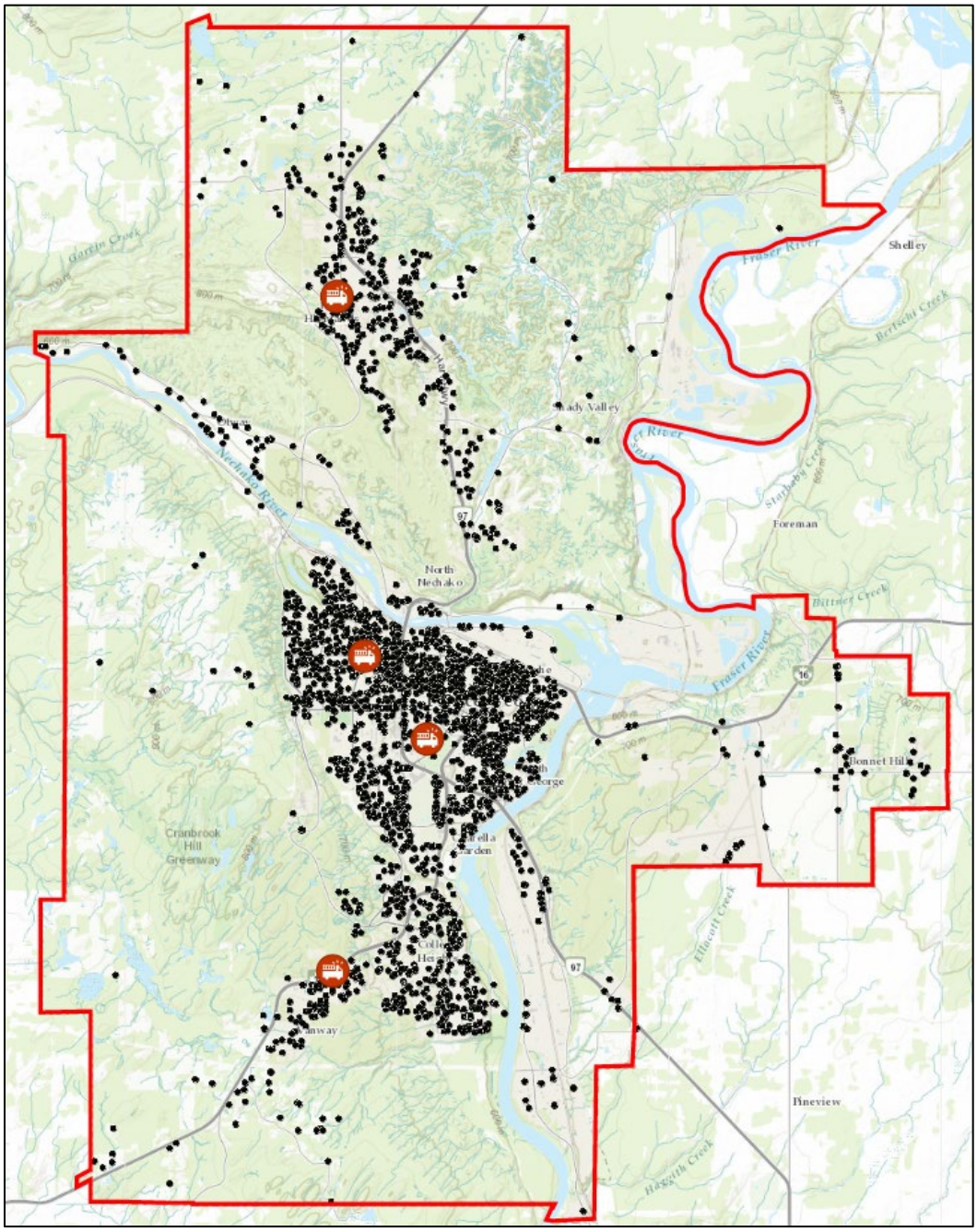

Figure 13: Alarms Activations, 2014 to 2022

This incident type can also be displayed as a heat map as shown in Figure 14, which shows a similar concentration in the core area of the City though further north.

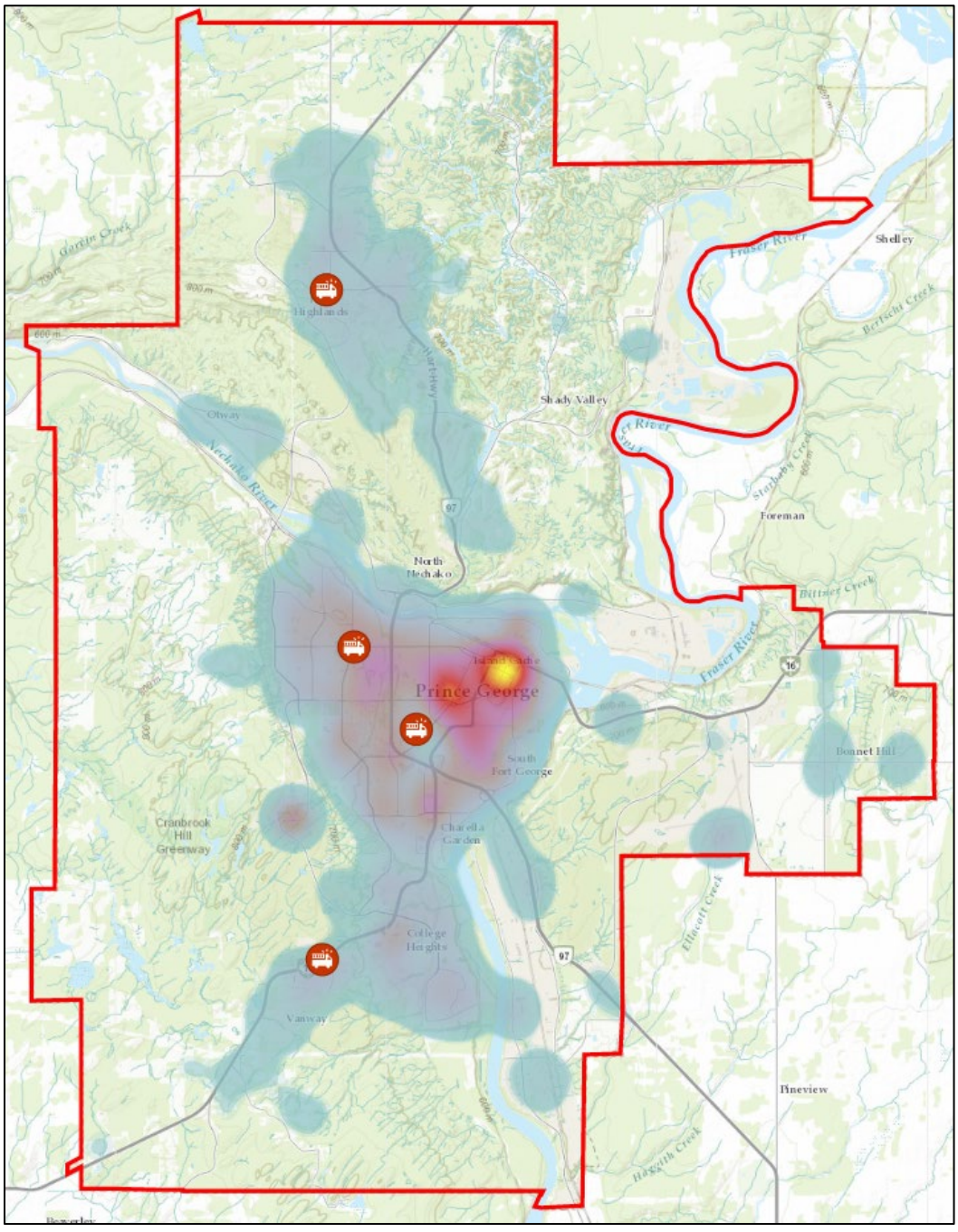

Figure 14: Alarm Incidents as a Heat Map, 2014 to 2022

7.3 Response Capability

The number of responses by the Department continues to increase with the central portion of the City accounting for more than 82% of all incidents in the most recent year. Incidents in Hall 1's primary response area alone accounted for more than 58% of all calls for service.

The current minimum number of on duty personnel is shown in Table 14 with only 11 on-duty suppression personnel protecting the central portion of the City.

Table 14: PGFRS Current Minimum Staffing.

Hall	Engine	Rescue	Assistant Chief	Total
1	4	2	1	7
2	4			4
3	4			4
4	4			4
			Total	19

The 2016 SOC Report recommended adding a second staffed unit at Hall 1 to deal with the significant call volume at this Hall. The staffing at Hall 1 is unchanged from the date of that report, even though the call volume in the Hall's primary response area has increased by some 93%, rising from 2,800 events in 2015 to 5,409 in 2022.

It is therefore recommended that the staffing for the core area of the City be increased by at least one apparatus staffed by four additional on-duty suppression personnel. This increase would reflect the first material increase in the number of suppression personnel since 2002**.**

It is important to understand that the staffing of a piece of apparatus on a 24/7/365 basis, covering four shifts, requires, on average, 22 additional firefighters. In other words, each on-duty suppression position requires 5.25 full time equivalent firefighters, to account for vacation, injury and illness, prescribed leaves (e.g., parental leave) and statutory holidays.

How this increase is allocated, and the period over which it is introduced, will need to be considered in discussions between the Fire Chief, the City Manager and Council. One option would be to staff Hall 2 with eight on-duty suppression personnel, allowing both the Engine and Ladder to be staffed; a second option would be to staff a second engine company at Hall 1, while moving the Rescue (which requires two suppression personnel to staff) to Hall 2. In either case, the on-duty staffing in the core portion of the City would rise from 11 to 15, which still is still slightly below the minimum requirement recommended under NFPA 1710 for a response to a single-family residence.[46]

[46] National Fire Protection Association, *NFPA 1710: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*, s. 5.2.4 covers minimum deployment recommendations for structure fires. Under s. 5.2.4.1, the minimum number recommended for a house fire is 16 – 17 personnel. This staffing model is further discussed in Appendix 2.

7.4 Fire Hall Location Review

The City's existing fire halls do not provide sufficient coverage to some critical portions of the Department's service area. The Fire Underwriters' review in 2013 noted a coverage deficit for the industrial properties in the BC Rail / Danson Industrial park area, which are more than five kilometres from the nearest hall (Hall 1):

> (p. 8) The BCR/Danson/Prince George [Airport] area of the community is identified as high risk and having a low level of response. […]
>
> (p. 21) The BCR/Danson area shows a density of higher value Required Fire Flow points [i.e., areas requiring greater pumping capacity to manage potential fires]. […]
>
> (p. 36) First due pumper (engine) company coverage is weak in several areas of the city, particularly in the BCR industrial site. […]
>
> (p. 36) Recommendation 1: […] To provide a reasonable level of response in the BCR site, a fire station should be added in a position where all buildings on the site are within 5km by road of the fire station and preferably within 2.5 km.
>
> (p. 37) Recommendation 2: […] To provide good coverage with ladders, a ladder should be provided in the downtown, in the BCR industrial park (east of town), in the north and in the south (4 ladders total). […]
>
> (p. 39) Figure 10 Pumper Benchmark Deficiency […] This map clearly illustrates where weak response exists. Areas of note are as follows: […]
>
> - BCR/Danson area […]
>
> (p. 39) Recommendation 3: Consider Additional Fire Hall in the BCR/Danson/Prince George airport area. As previously identified an additional fire hall should be considered for serving the BCR/Danson and airport portion of the City […]

The Fire Underwriters' review then further considered the issue in section 13.3, noting that some road optimization may be necessary to provide coverage out to the airport (or the siting will vary considerably).[47]

While the newly built, relocated Hall 1 has somewhat improved coverage, much of the industrial area south and east of the Fraser River is still more than five kilometres distant. In addition, the 2016 SOC Report noted the need for a proper training facility for the Department. The fifth hall, located in an industrial area, would provide an excellent opportunity to build this needed infrastructure. However, the addition of such a training site is dependent on the City being able to acquire a suitably-sized piece of property. The Department is proposing to undertake a space allocation study, which will examine the issue of possible location for such a facility.

[47] Fire Underwriters Report (2013), at p. 112. It is not clear, however, that any material road optimization is possible, given the geography and topography of the that portion of the City.

While this report suggests it be included as part of Hall 5, that suggestion is subject to the results of the more detailed study that is to be undertaken.

As part of the review a total of five potential sites were reviewed, three of which are in the BC Rail industrial property. The other two were east of Highway 97 in the direction of the airport. All five sites were assessed but the locations 4 and 5 were judged not suitable because of their distance from the core part of the City. A detailed analysis of these two sites was therefore not included. These potential locations are shown by blue icons in Figure 15 below. We have not examined any road optimization issues that were suggested in the 2013 review by the Fire Underwriters.

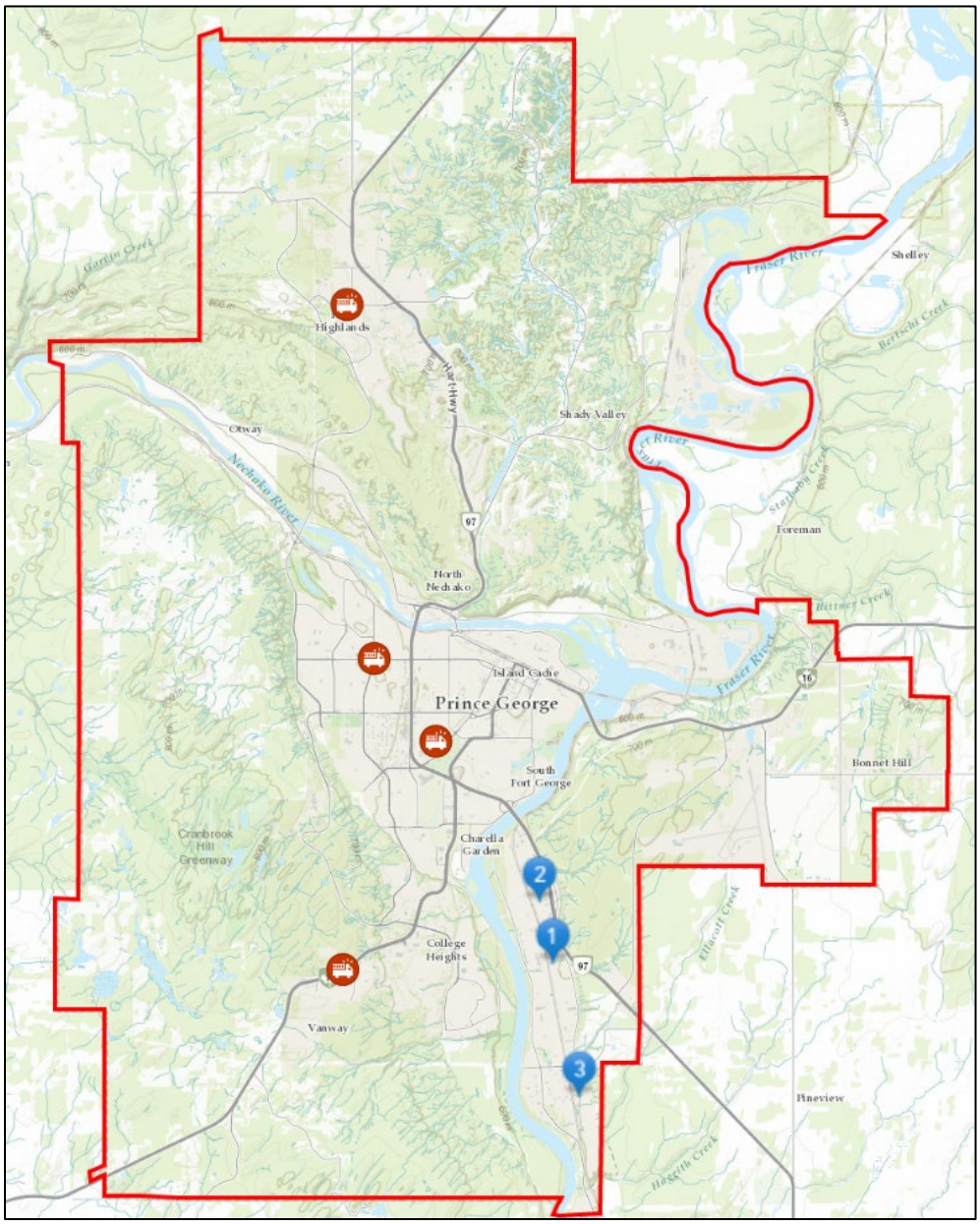

Figure 15: Prince George Four Fire Halls, plus Additional Optional Sites.

These issues and the possible location for a fifth hall are considered in the following sections which examine:

- existing coverage for this portion of the Department's service area;
- the need for a proper training site; and
- the possible locations for a fifth hall.

Provision of a staffed Hall 5 would materially improve coverage south and east of the Fraser River, meeting the Fire Underwriters' requirements for this area, and provide another staffed unit potentially capable of responding to back up or support Hall 1 in the City core. It also would reduce the number of calls currently attributed to Hall 1, by reducing its service area. In addition, it would enable the Department to build a badly-need training facility. The area is primarily industrial and commercial, which means the training activities will not create the use conflicts that would arise in a more residential part of the City.

7.4.1 Existing Coverage Issues

The coverage of the area south and east of the Fraser River is examined in this section. At present, this area forms part of Hall 1's primary coverage area. The coverage analysis is based on the Fire Underwriters' five- and eight-kilometre maximum travel distances for PFPC and DPG rating purposes. Notwithstanding the relocation of the Hall 1, much of the area is too far from the Hall to be rated as protected.

As Hall 4 does not provide Fire Underwriters-compliant coverage to either the City core or the industrial area southeast of the Fraser River, a review of its coverage zone was not included.

7.4.1.1 Hall 1 DPG and PFPC Coverage

Figure 16 shows the five- and eight-kilometre coverage for Hall 1 at its new location. The PFPC requirement is met for the majority of the downtown core area of the City shown by the red polygon, but only marginally for the industrial area in the south-east portion of the City. There is, however, now reasonable DPG coverage for a portion of the area southeast of the Fraser River (an improvement from Hall 1's former location), though most of the properties are industrial or commercial.

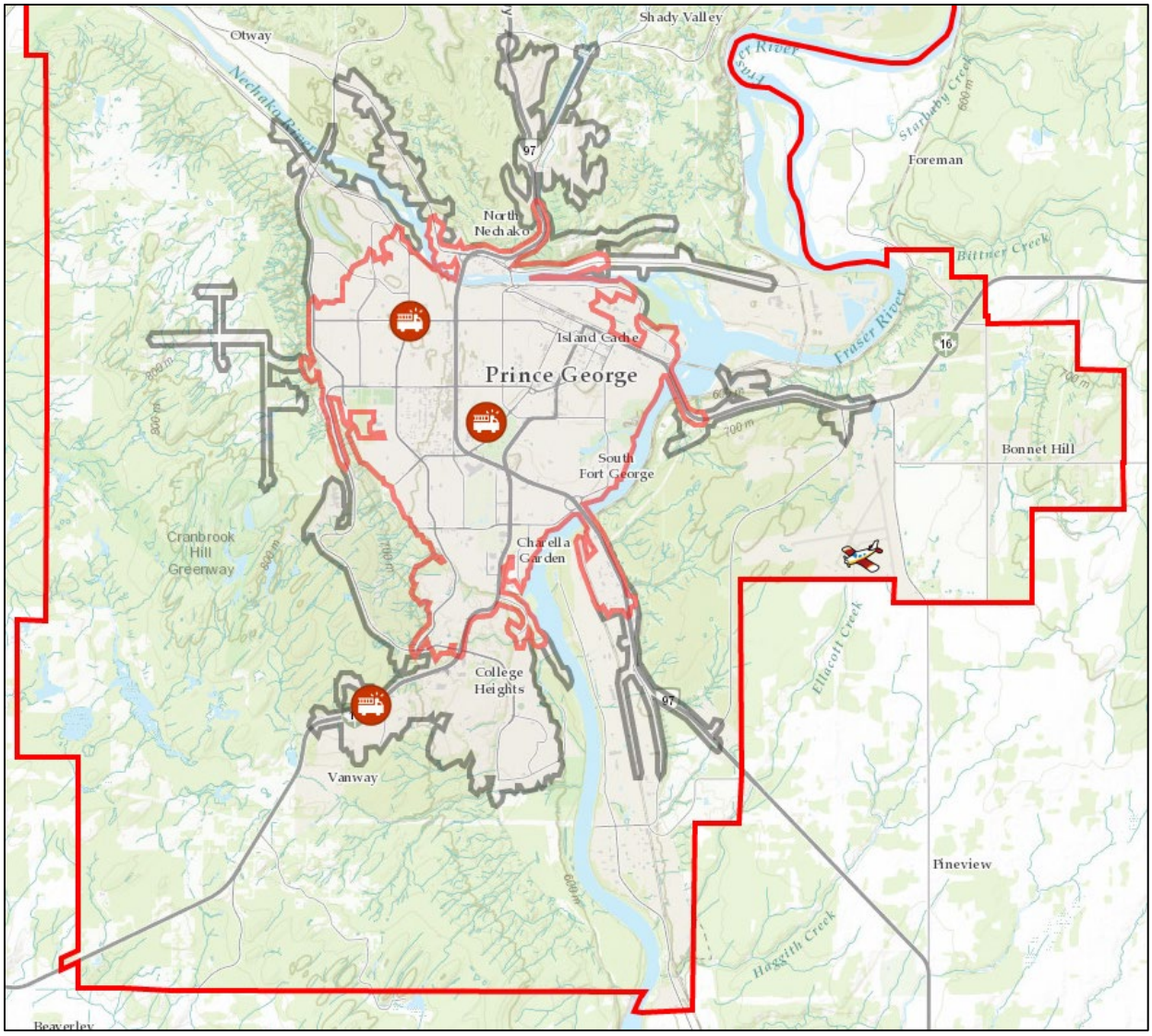

Figure 16: Hall 1 Coverage for DPG (eight kilometre black polygon) and PFPC (five kilometre red polygon).

7.4.1.2 Hall 2 DPG and PFPC Coverage

Figure 17 shows the five- and eight-kilometre coverage for Hall 2. The PFPC requirement is met for the majority of the downtown core area of the City shown by the red polygon, but it does not reach the industrial area in the south-eastern portion of the City.

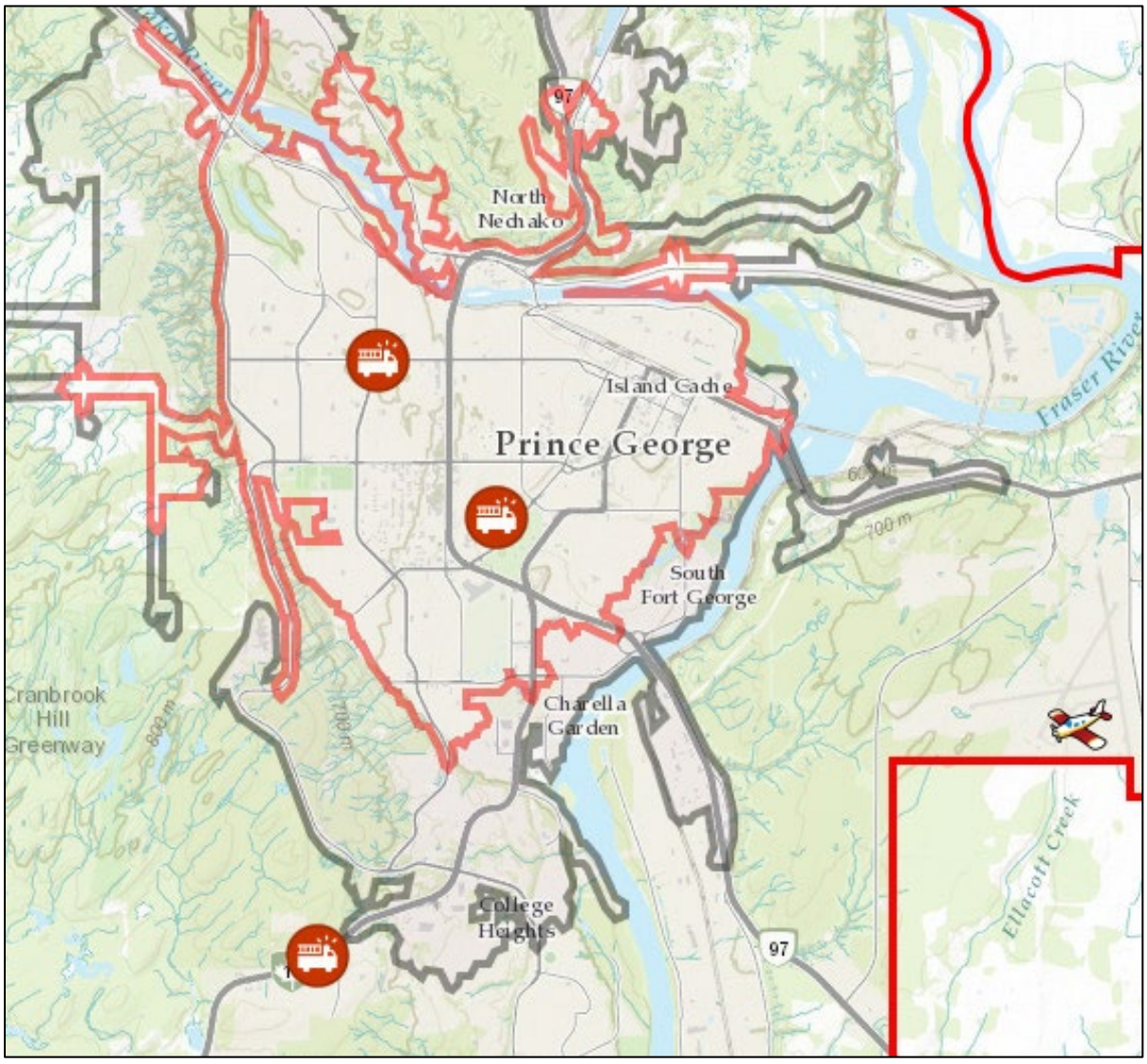

Figure 17: Hall 2 Coverage for DPG (eight kilometre black polygon) and PFPC (five kilometre red polygon).

7.4.1.3 Hall 3 DPG and PFPC Coverage

Figure 18 shows the five- and eight-kilometre coverage for Hall 3. The DPG, and to a lesser extent, the PFPC, requirements are met for a portion of the downtown core area of the City shown by the grey and red polygons, respectively. The industrial area in the south-eastern portion of the City is beyond a Fire Underwriters-compliant response from Hall 3.

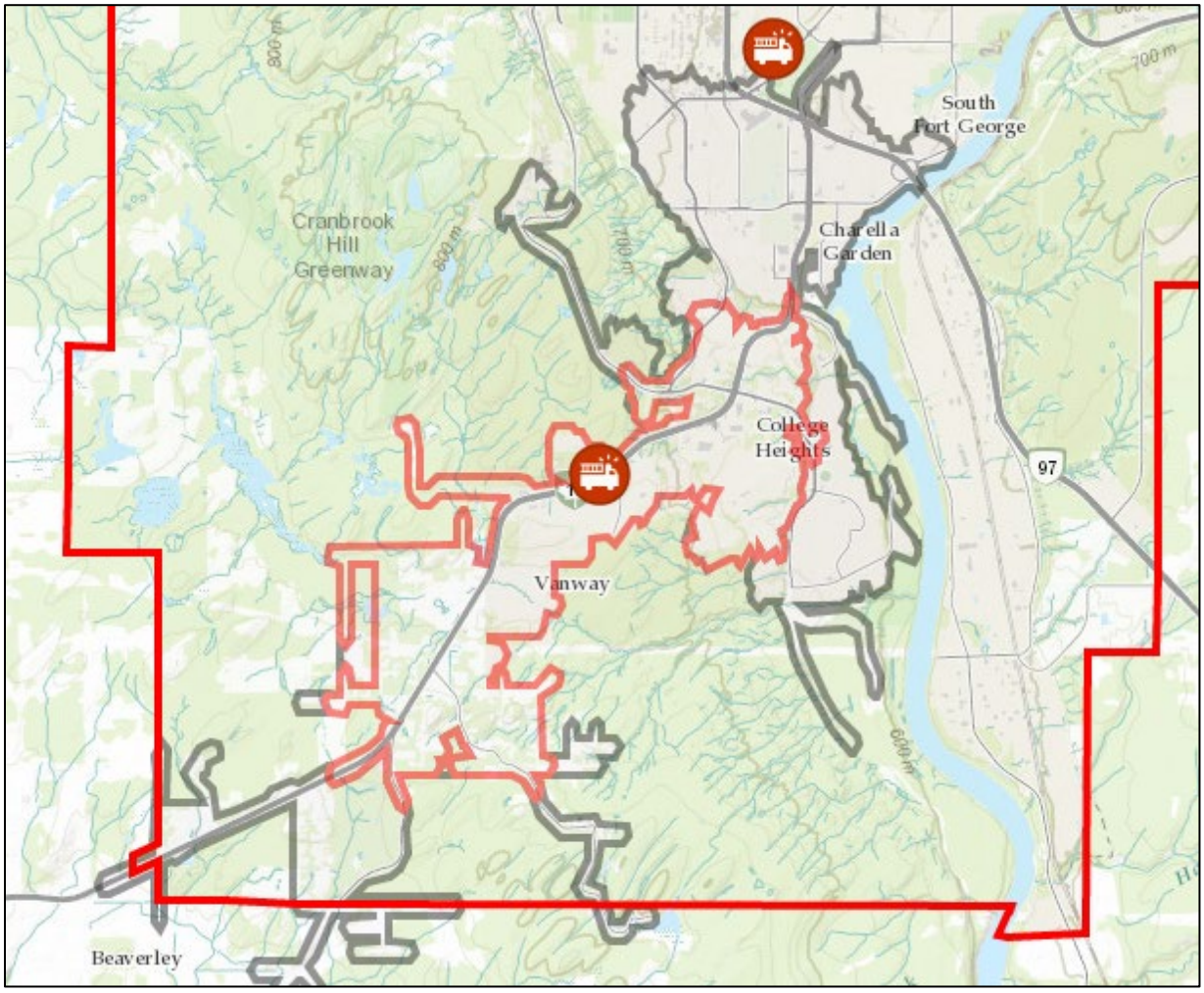

Figure 18: Hall 3 Coverage for DPG (eight kilometre black polygon) and PFPC (five kilometre red polygon).

7.4.1.4 Summary

Figures 16 – 18 aptly illustrate the lack of adequate coverage into the industrial lands in the southeastern portion of the City. The properties located there are not only significant in terms of value-at-risk, but they are of a nature and type that requires increased pumping capacity to undertake an effective response. The need for an additional hall to service this area is evident.

7.4.2 Training Site

A key recommendation of the 2016 SOC Report was the need to provide the Department with a dedicated site for training. The specific recommendation was as follows:

> **Recommendation:** *Consideration should be given to improving the training facilities. (currently fire hall setting). This should include a dedicated Department training site (possibly located in the industrial area) to simulate scenario-based common types of incidents and allow for live-fire exercises. The site should also include training rooms, required training facilities/equipment and outside props.*

The suggestion that the training site be located in the industrial area was to avoid the kinds of conflicts that arise when such sites are too closely situated to residential areas. This siting would allow for a live-fire training facility and well as a number of training activities which are, frankly, quite noisy (such as auto extrication training).

Given the need for a new hall to serve the industrial properties southeast of the Fraser River, the Department is considering how the active fire hall could be coupled with a new training facility. As part of the review, the Consultants, along with the Fire Chief and Deputy Chief of Operations, reviewed a number of modern training facilities in the lower mainland: Delta Hall 4; the Maple Ridge Fire Academy; Port Coquitlam Hall 1; and the Vancouver Fire/Rescue training site at Chess Street. Details of these site visits can be found in Appendix 3. During these discussions, the possibility of attracting one more partners for such a Prince George training facility was also canvassed with the Fire Academy at the Justice Institute of British Columbia and the First Nations Emergency Services Society of BC ("FNESS").

Each of these had live-fire capability, some using compressed gas, others using class A fuels (e.g., wood pallets). In the case of Delta, Port Coquitlam and the Maple Ridge Fire Academy, the training facility is co-located with a staffed fire hall. In the case of Maple Ridge, the hall is staffed by trainee firefighters, while Delta's is staffed by a regular on-duty crew. Port Coquitlam's facility is co-located with its main Hall 1. Vancouver operates a large standalone facility a few blocks from Hall 1. The Delta and Port Coquitlam facilities are approximately 13,000 square metres, the standalone facility in Vancouver is 11,600 square metres, the Maple Ridge site is much larger, at over 40,000 square metres.

The option for a combination fire hall/training facility was discussed with Delta and Port Coquitlam. Their comment was that having a staffed unit there achieved at least two objectives:

- the site was occupied and managed, reducing the time to activate it when being used and ensuring it is properly secure; and
  depending on the status of the units being trained, the staffed unit could be used to fill in for at the hall that was attending for training.

7.4.3 Location Options

A total of five possible locations were examined. Two of these, north of Highway 97, were considered unsuitable. The other three are located close to the BCR lands: only two of them provide any material, Fire Underwriters' compliant coverage overlap into the City core.

7.4.3.1 Hall 5/Training Site Option 1

Figure 19 shows the five- and eight-kilometre coverage area for Option 1 for the proposed Hall 5. The PFPC requirement is met for a majority of the industrial area as well as for a portion of the downtown core area of the City. This is one location that should be studied in terms of siting, size and accessibility to transportation corridors as part of an overall needs assessment.

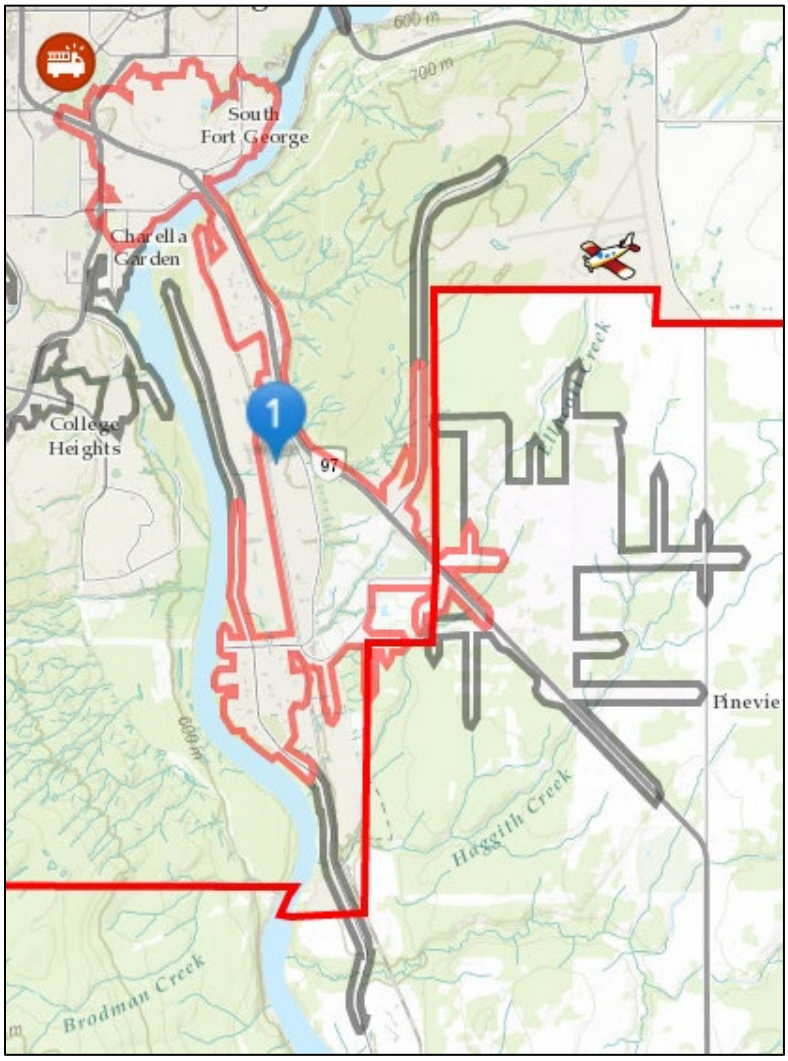

Figure 19: Option 1 for Hall 5/Training Site Coverage for DPG (eight kilometre black polygon) and PFPC (five kilometre red polygon).

7.4.3.2 Hall 5/Training Site Option 2

Figure 20 shows the five- and eight-kilometre polygons for Option 2 for the training site and Hall 5. The PFPC requirement is met for a similar majority of the industrial area as well as for a larger portion of the downtown core area of the city. Similar to Option 1, this location should be studied in terms of siting, size and accessibility to transportation corridors.

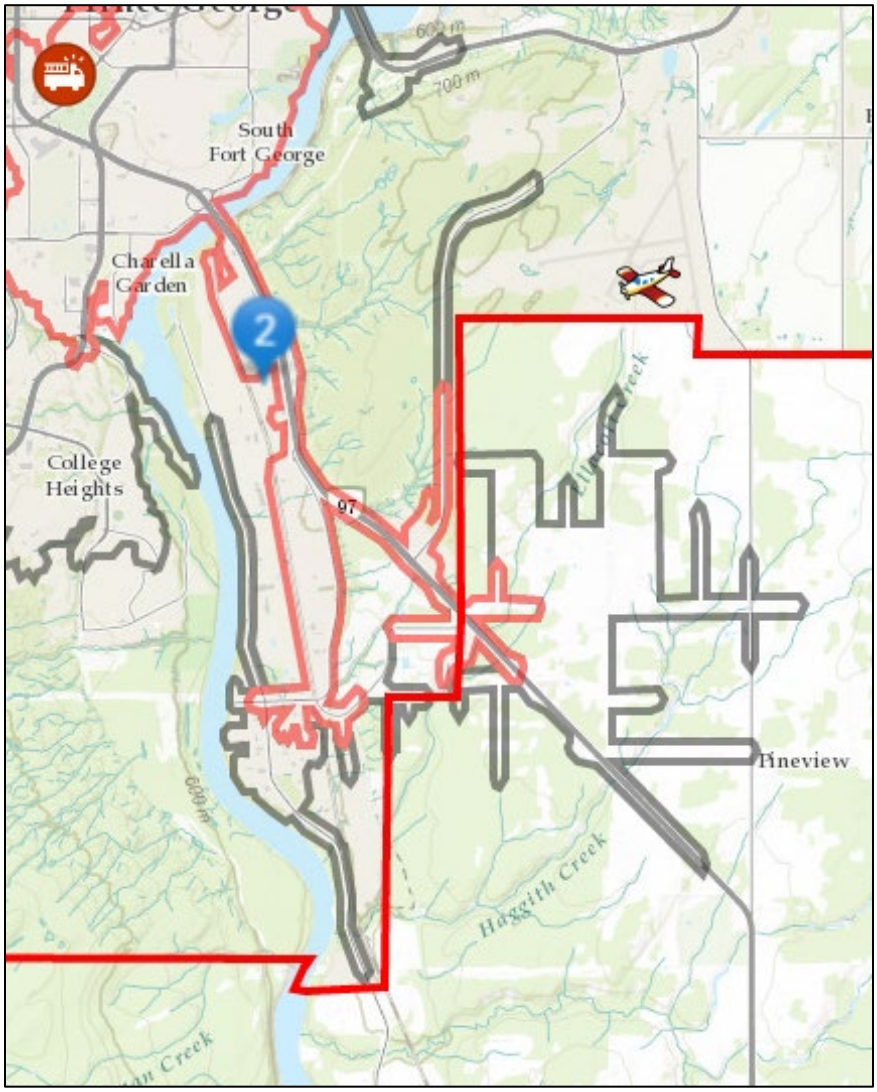

Figure 20: Option 2 for Hall 5/Training Site Coverage for DPG (eight kilometre black polygon) and PFPC (five kilometre red polygon).

7.4.3.3 Hall 5/Training Site Option 3

Figure 21 shows the five- and eight-kilometre polygons for Option 3 for the training site and Hall 5. The PFPC requirement is met for a majority of the industrial area but not for any portion of the downtown core area of the city.

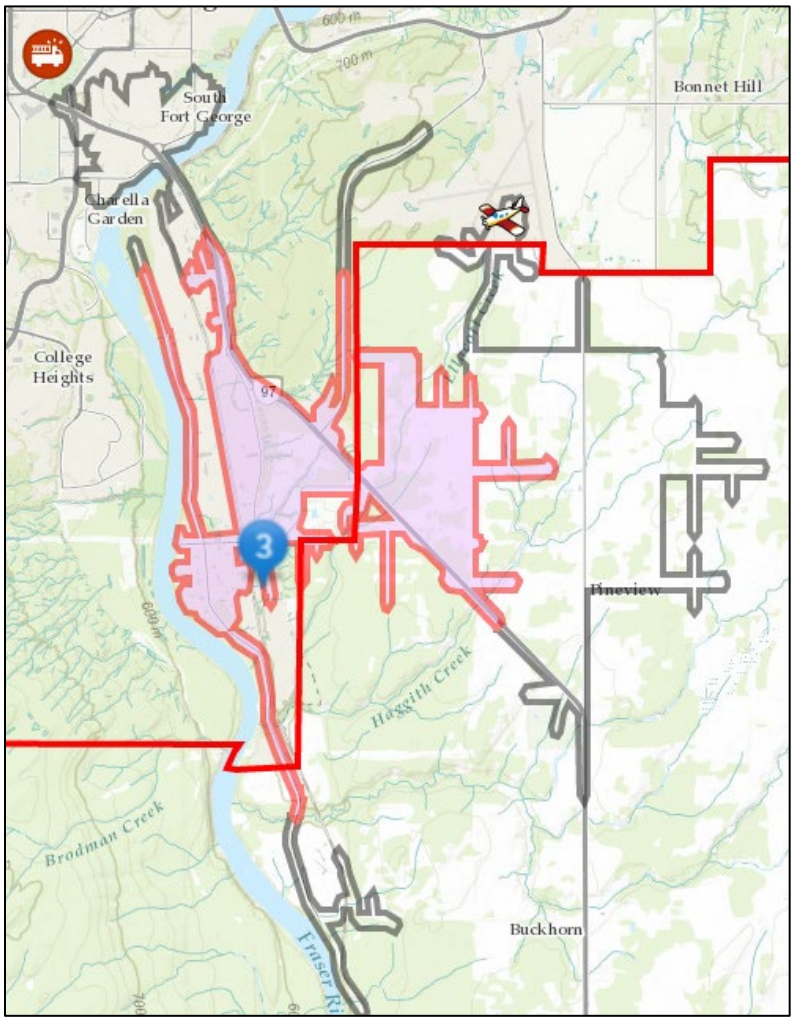

Figure 21: Option 3 for Hall 5/Training Site Coverage for DPG (eight kilometre black polygon) and PFPC (five kilometre red polygon).

7.4.4 Summary

Options 1 and 2 would be preferred as they each provide coverage to the BC Rail Industrial area as well as providing the additional staffed response to the core portion of the City to support the NFPA 1710 response requirements. Of the two, Option 2 would provide the greatest coverage for the core area. Option 3 would provide the highest degree of PFPC coverage for the industrial area but would not provide a similar benefit to the core portion of the City.

7.5 Training Site Next Steps

The need for a training site for the Department was identified in the 2016 SOC Report and remains a priority. Siting a training facility away from a residential area is a feature of each of the fire departments visited, each of which is located in either an industrial or remote area.

Lessons learned from the four sites visited had many common themes including the problem of building too small and leaving little room for expansion. In several cases there had not been sufficient planning for the amount of water runoff from fire training activities; in another case the amount of 'debris' from auto extrication had not been considered. The issue of training administration was repeated by each saying that they had not allowed sufficient space to record, store and access training records. The rail training facility at Maple Ridge is the only one available in the province but because of its distance from operating railroads, does not have contemporary tank cars.

The options to provide an operating partnership with either the JIBC or First Nations or both suggests that a period of needs identification and then space planning would be a priority. Some amount of onsite accommodation may be a requirement and with forethought this could be managed with an appropriately sized site.

The first recommendation then is for the City and the Department to develop a clear needs analysis including the options for partnerships with the JIBC and First Nations and then to retain one of a number space-planning companies to ensure the spatial requirements are well understood prior to developing a budget and authorizing construction.

The second recommendation is that the training site for the Department include sufficient space for its training department and also to include an operating fire hall, similar to Delta and Port Coquitlam.[48]

7.6 Recommendations

#7- 1 Consideration should be given to improving the training facilities (currently the fire hall setting). This should include a dedicated Department training site (possibly located in the industrial area) to simulate scenario-based common types of incidents and allow for live-fire exercises. The site should also include training rooms, required training facilities/equipment and outside props. The configuration for this training site should be led by a clear needs analysis including the options for partnerships with the JIBC and First Nations and then to retain one of a number space-planning companies to ensure the spatial requirements are well understood prior to developing a budget and authorizing construction.

[48] There are other fire departments which have their training site adjacent to an operation fire hall, the latest being Coquitlam similar to others in Metro Vancouver, Saanich's Hall 2 and others.

8.0 Organizational Structure and Staffing

8.1 Current Organizational Model

The Department's current staffing is shown in Table 15 below and illustrated in the organizational chart in Figure 22. The approved staffing for the Department is 131.5 full-time equivalent positions ("FTEs") including 115.5 in Fire Services, fourteen in the FOCC and two in the Emergency Program.

Table 15: Department FTEs, 2022

Position	Fire Services	FOCC	Emergency Program	Total
Fire Chief	1			1
Deputy Fire Chief - Operations	1			1
Deputy Fire Chief - Administration	1			1
Administrative Coordinator 2	1			1
Administrative Assistant	1.5			2
Chief Communications Officer		1		1
Assistant Chief Communications Officer		1		1
Fire Dispatcher		8		8
Relief Fire Dispatcher		4		4
Manager, Emergency Programs			1	1
Emergency Program Coordinator			1	1
Chief Fire Prevention Officer	1			1
FPO Captain	1			1
FPO Lieutenant	1			1
FPO Inspector	1			1
Assistant Chief - Suppression	4			4
Captain - Suppression	16			16
Lieutenant - Suppression	4			4
Firefighter - Suppression	72			72
Relief Firefighter - Suppression	8			8
Chief Training Officer	1			1
Training Branch Captain	1			1
Total FTEs	115.5	14	2	131.5

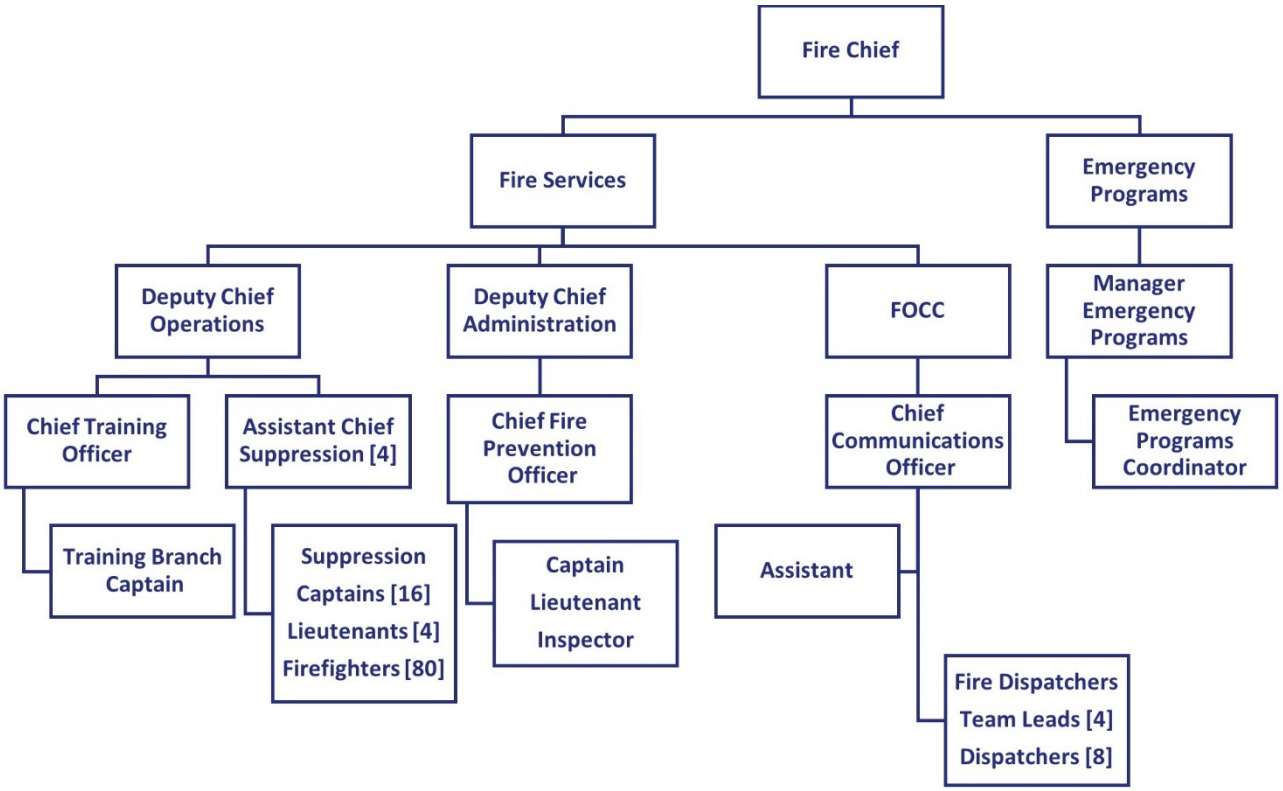

Figure 22: Department Organizational Chart, 2022

8.1.1 Leadership Team

The Department's leadership team consists of the following exempt positions:

- Fire Chief;
- Deputy Chief - Operations;
- Deputy Chief - Administration;
- Chief Communications Officer
- Assistant Chief Communication Officer; and
- Manager, Emergency Programs;

The Fire Chief is responsible for the overall direction and administration of the Department and has four direct reports including the two Deputy Chiefs, the Assistant Chief Communications Officer and the Manager of Emergency Programs.

- The Deputy Chief - Operations is responsible for training and the delivery of fire and rescue services and has five direct reports including one Chief Training Officer and four Assistant Chiefs.
    - The Chief Training Officer is responsible for the overall administration, development and coordinated delivery of training programs for the suppression division and utilizes fire captains, qualified shift trainers and external contractors to deliver training to the members.

    - The Assistant Chiefs are assigned to the four platoons and work a two-platoon shift schedule of two dayshifts followed by two nightshifts followed by four days off. The Assistant Chiefs are responsible for the largest portion of the Department dedicated to fire suppression, emergency medical response, hazardous materials, rescues and many non-emergency incidents.

- The Deputy Chief - Administration is responsible for fire prevention and administration and has two direct reports including the Chief Fire Prevention Officer and the Administrative Coordinator.
    - The Chief Fire Prevention Officer leads the Fire Prevention Branch (the "FPB") and oversees three fire inspectors. The responsibilities of the FPB includes fire inspections, fire investigations, pre-planning, fire safety plans and public education. The FPB is described in more detail in Section 11.
    - The Administrative Coordinator oversees the administrative assistant positions and is responsible for providing support and financial expertise to the leadership team.
- The Chief Communications Officer and Assistant Chief Communications Officer are responsible for the overall supervision and operation of the FOCC.
- The Manager of Emergency Programs is responsible for overall management of the City's Emergency Management Program. This involves leading the development, implementation, maintenance, and management of various programs, processes and operations that serve as the City's emergency response framework. These include:
    - supervision of the Emergency Programs Coordinator (designated as the ESSD)
    - hazard, risk and vulnerability assessments; business continuity plans; response and recovery plans; community evacuation plans; information protocols; and a comprehensive training exercise plan.

8.1.2 On-Duty Suppression Staffing

The fire suppression staffing model has seen changes over the past thirty years, most notably in 1994 was when Council approved the on-duty staffing increase from three to four members for Halls 2, 3 and 4. The actual implementation of the additional firefighter staffing occurred in the following year after a recruitment process and completion of the training program for the new firefighters. Additional staffing improvements occurred in 2003 and 2020 with an increase of one firefighter and a lieutenant on the rescue truck.

The Department currently maintains twenty-five suppression members on each of the four shifts to staff the four firehalls. The minimum on-duty staffing level is nineteen and the Department's policy is to use relief firefighters and overtime to maintain that number. The on-duty staffing assignments for each hall are shown in Table 16 below and include cross-staffing of apparatus where noted.

Table 16: Current Minimum On-Duty Suppression Staffing

Fire Hall	Staffing
Hall 1	1 Assistant Chief 1 Captain* 1 Lieutenant 4 Firefighters • 3 on the Engine* • 1 on the Rescue
Hall 2	1 Captain 3 Firefighters (* cross-staffed engine/platform)
Hall 3	1 Captain 3 Firefighters (cross-staffed with engine/water tender)
Hall 4	1 Captain 3 Firefighters (cross-staffed with engine/water tender)

The chart below shows the current minimum on-duty staffing by hall.

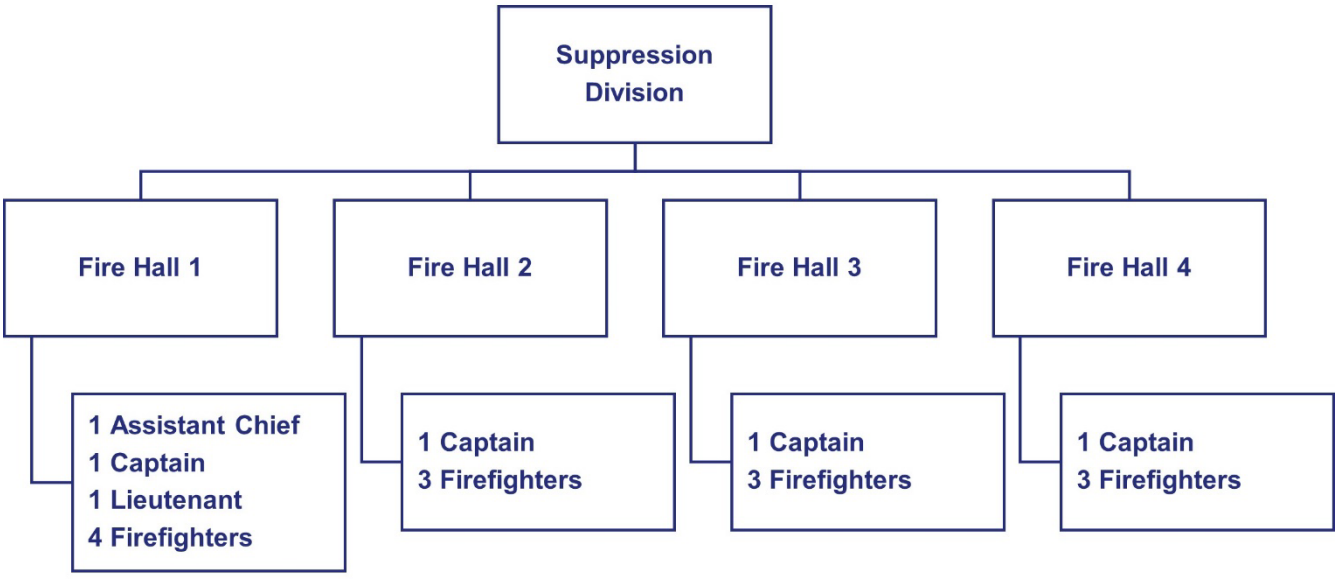

Figure 23: Current Minimum On-Duty Suppression Staffing

8.2 Proposed Changes to the Organizational Model

The 2016 SOC Report recommended that:

> The Department consider adding a second staffed unit at Hall 1 to deal with the significant call volume at this hall. A second staffed unit would also provide a better opportunity to meet the NFPA 1710 requirements to have a minimum of 14 fire fighters on scene in 8 minutes.

This recommendation has not been implemented but should be considered as a priority given the call volume in Hall 1's primary coverage area. The rationale for additional resources is included in other sections of this report and the tables and charts below have been provided to illustrate the impact of the recommended changes to the on-duty staffing model.

Table 17 below shows the current on-duty staffing at each hall.

Table 17: Current On-Duty Staffing Model

Fire Hall	Assistant Chief	Captain	Lieutenant	Firefighter	Total
Hall 1	1	1	1	4	7
Hall 2	0	1	0	3	4
Hall 3	0	1	0	3	4
Hall 4	0	1	0	3	4
Total	1	4	1	13	19

The City should prioritize the addition of one staffed engine in Hall 1. The impact of this change would add one captain and three firefighters to the on-duty staffing model in Hall 1 and as a result, the minimum number of on-duty members will increase from nineteen to twenty-three. The immediate benefit of this recommendation will be the additional support to the busiest response area, particularly in cases of serious fires or concurrent emergencies.

Table 18: Addition of One Staffed Engine at Hall 1

Fire Hall	Assistant Chief	Captain	Lieutenant	Firefighter	Total
Hall 1	1	2	1	7	11
Hall 2	0	1	0	3	4
Hall 3	0	1	0	3	4
Hall 4	0	1	0	3	4
Total	1	5	1	16	23

The City should develop a plan to staff one additional engine for the proposed fire hall (Hall 5) in the BC Rail area. The impact on the on-duty staffing model would include the addition of one Captain and three firefighters. Including the second engine in Hall 1, the total number of on-duty members would increase to twenty-seven.

The figure and chart below show the combined impact of adding one staffed engine to Hall 1 and one staffed engine in Hall 5. These changes require the addition of two Captains and six firefighters to increase the on-duty shift strength from nineteen to twenty-seven.

Table 19: : Addition of One Staffed Engine at both Hall 1 and the Proposed Hall 5

Fire Hall	Assistant Chief	Captain	Lieutenant	Firefighter	Total
Hall 1	1	2	1	7	11
Hall 2	0	1	0	3	4
Hall 3	0	1	0	3	4
Hall 4	0	1	0	3	4
Hall 5	0	1	0	3	4
Total	1	6	1	19	27

The chart below shows these changes.

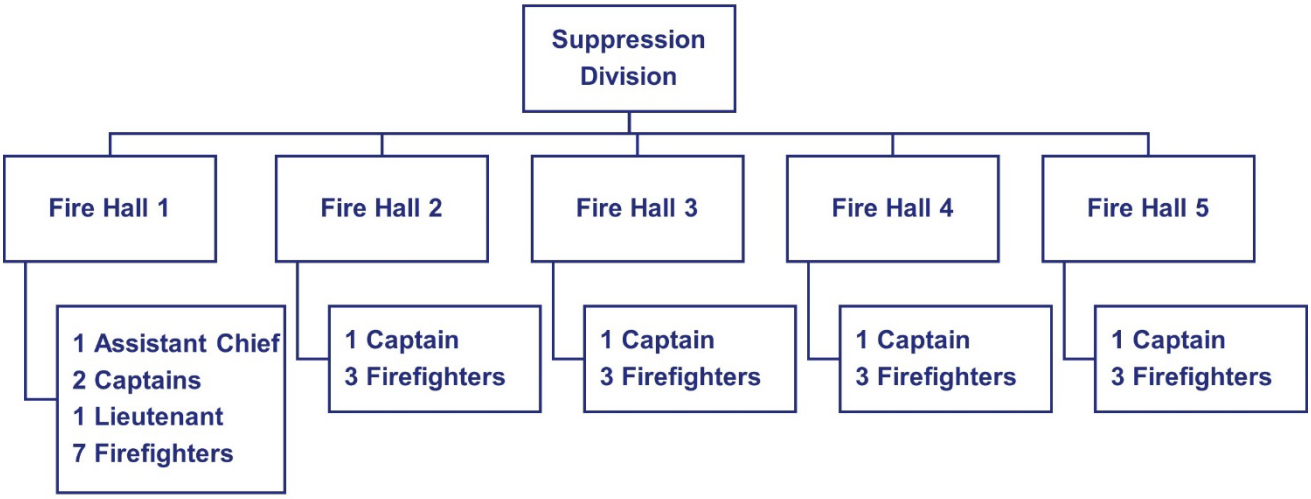

Figure 24: Proposed Organizational Model

The table below shows the incremental impact of the proposed staffing increases on the Department's overall FTE count based on the recommendation for additional staffed engines in Halls 1 and 5. The affected positions are shown in bold in the table.

Table 20: Proposed Staffing Increases – Number of FTEs

Position	Division	Current FTEs	Add 1 Engine (Hall 1)	Add 2 Engines (Hall 1 & 5)
Fire Chief	Administration	1	1	1
Deputy Fire Chief - Operations	Administration	1	1	1
Deputy Fire Chief - Administration	Administration	1	1	1
Administrative Coordinator 2	Administration	1	1	1
Administrative Assistant	Administration	1.5	1.5	1.5
Chief Communications Officer	Communications	1	1	1
Assistant	Communications	1	1	1
Fire Dispatcher - Team Lead	Communications	4	4	4
Fire Dispatcher	Communications	8	8	8
Manager, Emergency Programs	Emergency Program	1	1	1
Emergency Program Coordinator	Emergency Program	1	1	1
Chief Fire Prevention Officer	Fire Prevention	1	1	1
FPO Captain	Fire Prevention	1	1	1
FPO Lieutenant	Fire Prevention	1	1	1
FPO Inspector	Fire Prevention	1	1	1
Assistant Chief - Suppression	Operations	4	4	4
Captain - Suppression	**Operations**	**16**	**20**	**24**
Lieutenant - Suppression	**Operations**	**4**	**4**	**4**
Firefighter - Suppression	**Operations**	**72**	**86**	**100**
Relief Firefighter - Suppression	**Operations**	**8**	**10**	**12**
Chief Training Officer	Training	1	1	1
Training Branch Captain	Training	1	1	1
	Total FTEs	131.5	151.5	171.5

8.3 Recommendations

#8-1: The City should prioritize the addition of one staffed engine in Hall 1.

#8-2: The City should develop a plan to staff one additional engine for the proposed fire hall (Hall 5) in the BC Rail area.

9.0 Emergency Program

The *Emergency Program Act* (the "EPA") sets out the requirements for local authorities, which includes municipalities such as the City, relating to emergency planning, risk identification and mitigation, emergency response obligations and recovery efforts. Among other things, the EPA requires a local authority to prepare and maintain an emergency plan, assess area risks, establish and maintain an emergency management organization, provide training to its staff and volunteers, exercise its emergency plan and establish procedures to implement its plan (including responses, management of victims' needs and recovery processes).[49] The EPA permits a local authority to appoint an emergency program coordinator and/or one or more committees, and to delegate its authority (other than the authority to declare a state of local emergency) to such emergency program coordinator, committee(s) or its emergency management organization.[50]

The City's obligation to develop and implement an emergency program under the EPA is addressed by the *Emergency Program Bylaw No. 7920, 2006* ("Bylaw No. 7920"). It should be noted that the Province is in the process of developing a replacement for the EPA. Ironically, perhaps, its introduction has been delayed by a series of major crises over the past several years – including the pandemic and a significant wildfire season experienced in 2021. The new act is not expected to be introduced now until the spring of 2023.[51] When it comes into force, it will be necessary to review and revise Bylaw No. 7920, at which time the comments below also can be addressed (subject to also addressing any changes required by the new statute).

It also should be noted that British Columbia has formally adopted the Sendai model for planning, mitigation, response and recovery from disasters, which model is expected to be enshrined in the new statute. This model can be expected to result in increased obligations for risk mitigation efforts by local governments, improved recovery planning, and the formal inclusion of a broader range of stakeholders in emergency planning, including First Nations.

9.1 Structure

The structure of the Prince George Emergency Program is established in Bylaw No. 7920. The Emergency Policy Committee (the "Policy Committee") is responsible for setting overall policy and providing direction to the Emergency Planning Committee. The Policy Committee comprises the Mayor, City Manager and "senior management team of the City". It meets

[49] EPA, s. 6, and *Local Authority Emergency Management Regulation*, B.C. Reg. 380/95 (as amended), s. 2.

[50] EPA, s. 6(4).

[51] See: Ministry of Public Safety and Solicitor General, "Where we are now," at https://www2.gov.bc.ca/gov/content/safety/emergency-management/emergency-management/legislation-and-regulations/modernizing-epa (accessed 8 September 2022).

annually to “discuss policy issues pertinent to the function of the City’s Emergency Program” and sets policy for the Emergency Planning Committee.[52]

The City has delegated all of its powers and authority, save the power to declare a state of local emergency, to the City Manager, who is expected to act as the Emergency Operations Centre (“EOC”) director.[53] The City Manager is responsible, among other things, for appointing the Emergency Program Coordinator (the “EPC”).[54] The EPC is a Deputy Chief in the Department. Although the bylaw provides that the EPC reports to the City Manager, as a matter of practice, this position actually reports to the Manager, Emergency Programs (the “MEP”), a role fulfilled by an Assistant Chief within the Department. The MEP’s role is not expressly identified in Bylaw No. 7920. When the bylaw is updated, the relevant positions, reporting lines, and authorities should be reviewed and updated as appropriate. In addition, the City should review whether the City Manager needs to be expressly granted the authority to onward delegate the powers delegated from Council under section 3.2 of the bylaw (e.g., to the MEP or EPC).[55]

The Emergency Planning Committee is chaired by the EPC. The Committee is appointed annually by the City Manager, but must include the City’s public information officer, as well representatives from various City departments or functions, including Emergency Social Services, police, fire, land use planning, municipal infrastructure, environmental services and finance and administration. There is required to be someone appointed to manage inter-agency liaison, and the City Manager may appoint such other individuals, agencies or City departments as he or she considers necessary.[56]

The Emergency Response and Recovery Plan (September 2005) (the “Emergency Plan”) outlines the City’s authority to act in emergencies and sets out the policies and procedures to be followed. The Emergency Plan also recognizes the need for coordination with other organisations, both government and private, that may assist the City during an emergency. The Emergency Plan is some 17 years old, and contains a number of outdated terms (e.g., it still uses the term “BCERMS”, which was revised some time ago to “BCEMS” by the Province): when the new EPA comes into effect, it will provide a good opportunity to review and update the Emergency Plan. When the revised plan is developed, there should be included a section at the front that tracks any amendments that may be made over time. The EPC should undertake at

[52] Bylaw No. 7920, definition of the “Emergency Policy Committee” in s. 2 and s. 3.1.

[53] Bylaw No. 7920, s. 3.2.

[54] Bylaw No. 7920, s. 3.3.

[55] Onward delegation is expressly contemplated in the City’s *Officer Positions and Delegation of Authority bylaw No. 8340, 2011* (as amended) (“Bylaw No. 8340”), but that delegation is limited to authorized designates and only relates to the powers and authorities expressly delegated under that bylaw. See s. 8 (Delegates and Authorized Designates) and s. 9 (No Delegation by an Authorized Designate). Bylaw No. 8340 expressly stipulates that it is not to be used “to interpret” and does not “otherwise affect” other delegation bylaws which are identified in Schedule B to Bylaw 8340 (a list which includes Bylaw No. 7920).

[56] Bylaw No. 7920, s. 3.4.

least an annual review of the content of the new plan, with the results of that review being appropriately minuted, even if no changes are made.

In practice, the Department is primarily responsible for the Emergency Program and members of the Department staff key positions, including the MEP and EPC roles. This responsibility should be more clearly represented in any update to Bylaw No. 7920, and in any update to the Emergency Plan itself. Both the MEP and the EPC work out of Hall 1 and are responsible for the day-to-day administration, planning and updating of the Emergency Program. Responsibilities also include the ongoing development of working relationships with other City departments, as well as with other local authorities and First Nations on emergency management. They are also responsible for the preparation and scheduling of training scenarios.

Emergency Social Services ("ESS") staff and volunteers, however, are managed by the City's Community Services department. There are approximately forty full- and part-time members who can be deployed to events when needed, including when victim services are required in connection with a police incident. Again, this role should be more clearly articulated in either the revised bylaw or updated Emergency Plan.

Subject to the provisions of the new EPA, the bylaw should formally recognize that the Emergency Planning Committee constitutes its "Emergency Management Organization" within the meaning of section 6(3) of the current EPA.

2017 and 2018 wildfire evacuation support were the last significant events resulting in a formal EOC activation. Divisional DOC's and EOC to a level 1 have occurred typically relating to weather events, specifically, heat, and significant rain events.

9.2 Training and Exercises

Training the City's personnel to perform emergency management roles is a critical and ongoing process that must be supported and maintained. The training programs are effective and designed to provide new members with a gradual introduction to emergency management starting with formal training and followed with the review of after-action reports in connection with supervised scenarios.

As with most organizations, the pandemic put a hamper of formalized training opportunities. With the move to the new fire hall, the Emergency Program have run informal ESS training sessions setting up reception Centres, Evacuee Registration training, and establishing a layout for the new EOC.

9.3 Facilities and Equipment

The City's primary EOC is located at Hall 1, which is built to post-disaster standards including back-up power supplies. It has sufficient meeting space and amenities to support operations for extended periods. The EOC is designed as a multi-use space that can be quickly configured to operate as a modern EOC. It is accessed only with a proximity card and its arrangement can be

scaled up or down depending on the needs of the event. Seating and workspaces are configurable, with access to data ports and visual aids that are strategically located in the space.

9.4 Planning

The Emergency Planning Committee's roles and responsibilities are set out in section 3.5 of Bylaw No. 7920. They include:

- preparing the Emergency Plan, which must both provide a general direction and framework that covers preparedness, response and recovery programs to deal with a disaster or emergency in the City, and set out the roles and responsibilities for all officials appointed pursuant to Bylaw No. 7920;
- establishing such sub-committees or working groups as it deems necessary to carry out its duties and obligations;
- subject to the final approval of Council, negotiating agreements with other municipalities or governments for the purpose of mutual aid or the formation of joint organizations;
- subject to the final approval of the City Manager, negotiating with individuals, societies, corporations or other legal entities, other than government bodies, for the engagement of one or more of their members deemed qualified to provided services necessary to achieve the objectives of Bylaw No. 7920; and
- submitting annually to Council, estimates of expenditures required to maintain and operate the Emergency Program.

10.0 Risk Assessment / HRVA

The City has recently updated its Hazard, Risk and Vulnerability Assessment ("HRVA").[57] The HRVA was originally prepared in 2009 by Smart Risk Control Inc., and updated by City staff in September 2020.

The HRVA identifies the most significant hazards facing the City as shown in Table 21, listing ten most likely to require site support from the EOC as well as nine others which are considered less likely to require such support.

Table 21: Hazards in Prince George (HRVA update 2020)

May Require Significant Site Support	Not Likely to Require Significant Site Support
1. Atmospheric Hazards	1. Bomb Threat
2. Disease - Human	2. Disease, Animal or Plant
3. Fire, Major Urban	3. Earthquake
4. Flooding	4. Food Contamination
5. Hazardous Materials	5. Landslide, Debris Flow
6. Terrorism	6. Lost Persons
7. Transportation Accident - Air	7. Social Disturbance, School Violence
8. Transportation Accident - Road	8. Structure Collapse
9. Utility Failure	9. Volcanic Eruption
10. Wildland / Urban Interface Fire	

The hazards are classified for likelihood of occurrence and consequence (impact and vulnerability) using a risk matrix as shown in Figure 25 below.

[57] Smart Risk Control Inc., *Community Risk Assessment: Hazards, Vulnerabilities and Risks in the City of Prince George,* 31 December 2009, updated September 2020, by Clayton Sheen and Tanya Spooner, City of Prince George.

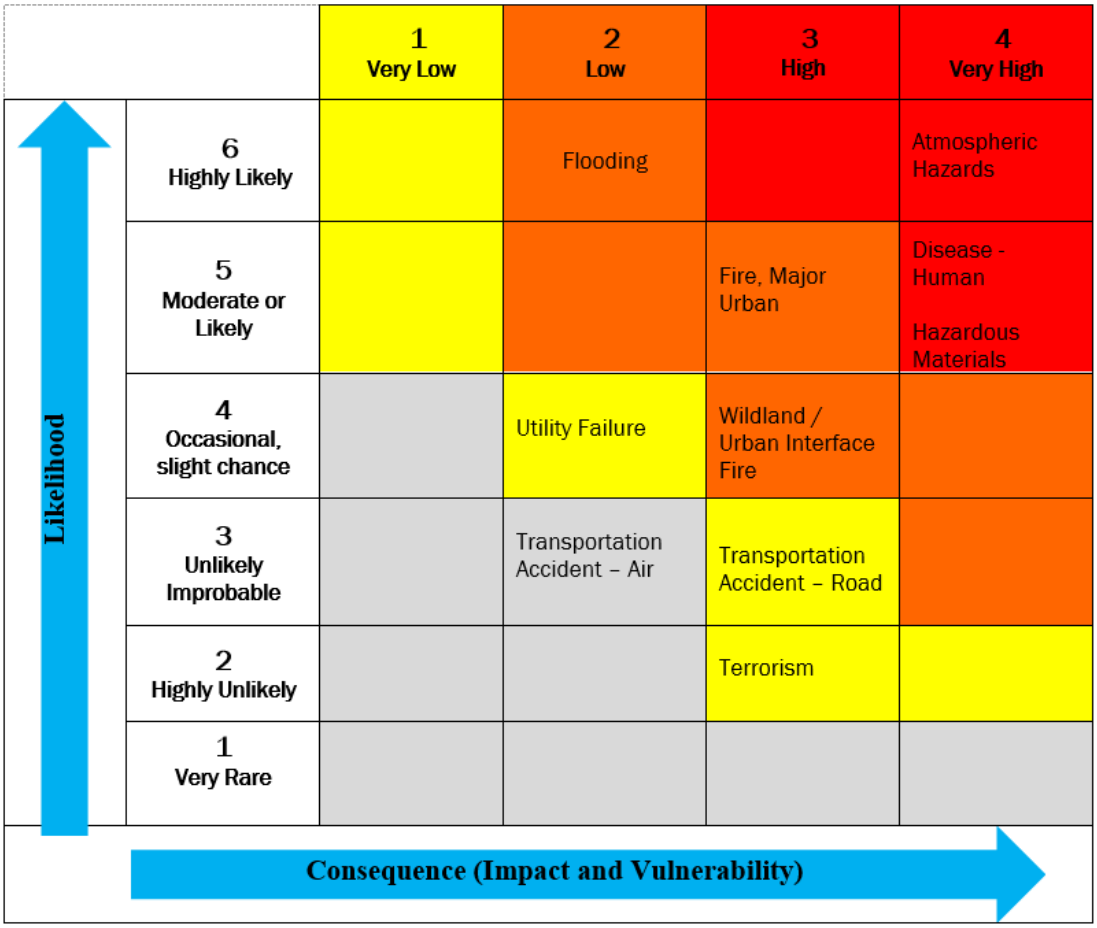

Figure 25: Priority Concerns Risk Matrix

The 10 most significant risks are discussed below.

1. Atmospheric Hazards: Highly Likely Risk, Very High Consequence

    a. The HRVA notes five previous major events, two of which were windstorms, with the others being a rainstorm, a flood and a snowstorm.

    b. Vulnerabilities and impacts associated with these events include loss or blocking of major transportation routes, the loss of critical infrastructure, structural collapse and isolation of some neighborhoods.

2. Disease – Human: Moderate or Likely Risk, Very High Consequence

    a. Six major events are noted, starting with the 1918 influenza event, the early 2000s impact of SARS in Canada, Legionnaires Disease in Toronto, the contamination of the water supplies in Walkerton, and more recently H1N1 and Covid-19.

    b. Vulnerabilities include the frail and elderly as well as civic staff, the loss of whom even temporarily could seriously affect the City's response capabilities.

3. Fire, Major Urban: Moderate or Likely Risk, High Consequence

    a. The HRVA comments on the impact of fires as follows:

        "The threat of fire to buildings in Prince George ranks among the most likely and dangerous types of emergencies. Although severe fires are rare due to today's fire prevention measures, fire in a residential, commercial, or institutional building could result in catastrophic impacts, especially among high-density occupancies, such as schools, homes for seniors, and the hospital."[58]

    b. There is a reference to nine previous major events, the most recent of which were the fires at Lakeland Mills in 2012 and the Econo Lodge in 2020.

    c. Vulnerabilities include the need to evacuate residents where there are fires in larger structures. Also noted is the potential to lose major facilities including the City Hall, the hospital, student housing at University of Northern BC and the two correctional centres.

4. Flooding: Highly Likely Risk, Low Consequence

    a. The risk is high for this issue given that a significant portion of the City is at the confluence of the two rivers and is flood-prone, low-lying ground.

    b. Eight previous floods are noted, caused by ice jams and the spring runoff.

    c. Vulnerabilities includes the potential impact on many civic structures including the City Hall; mitigation efforts are focused on diking.

5. Hazardous Materials: Moderate or Likely Risk, Very High Consequence

    a. This risk arises from the sizable quantities of hazardous materials that are manufactured in, or transported through, the City. These materials are required by or produced by, among others, the pulp mills and the refinery, and delivered by pipeline, rail or truck.

    b. There are eight specific hazardous materials events noted: three were within Prince George; the others were in Quesnel, Maple Ridge and on Vancouver Island.

    c. Mitigation efforts include designation of dangerous goods routes as well as the PGIMAC, which promotes the sharing of training and resources as well development of strategic response plans.[59]

[58] HRVA, at p. 29.

[59] A strategic plan for PGIMAC was prepared in 2014, with a hazardous materials tabletop exercise conducted in 2016.

6. Terrorism: Highly Unlikely Risk, High Consequence

    a. There are six referenced examples, the most recent being pipeline bombings in north-east BC in 2008. Others concerned a possible water contamination in Ladysmith (2001), a chemical release on a bus in Vancouver (2004), a bomb discovered on a BC Ferry (1999), the Air India bombing (1985) and the Sons of Freedom attacks on utilities and railways in the Kootenays (1960 to 1963).

    b. Vulnerabilities include the water system, transportation and major industrial facilities like the pulp mills.

    c. Mitigation efforts include ongoing threat and risk assessments and restricting access to critical infrastructure.

7. Transportation Accident – Air: Unlikely Improbable Risk, Low Consequence

    a. Five such accidents since 1989 were identified, four of which involving takeoff or landing at airports.

    b. The vulnerabilities are the areas immediately proximate to the airport or along the flight paths for takeoff and landing.

    c. Mitigation measures are limited to reviewing development proposals adjacent to the airport and limiting potential obstacles.

8. Transportation Accident – Road: Unlikely Improbable Risk, High Consequence

    a. There are seven reference accidents, all of which involved buses.

    b. The risks in this case include high occupancy vehicles like buses; and the potential for a major release of hazardous materials in the case of tanker trucks.

    c. Vulnerabilities include school children, followed by tourists and local residents while mitigation measures include ensuring that bus routes are assessed for risks.

9. Utility Failure: Occasional Risk, Low Consequence

    a. Six past events are identified, four of which were power outages, one a water shortage (Tofino in 2006) and the sixth, a failure of a natural gas pipeline in Dawson Creek in 2000. Two of the power failures were specific to Prince George, one in 2000 and the other in 2019.

    b. Vulnerabilities include most elements of the City including major facilities like schools and hospitals as well as major industries.

    c. Mitigation measures include backup power systems for some facilities as well as initiatives to place more power lines underground.

10. Wildland / Urban Interface Fire: Occasional Risk, High Consequence

a. The HRVA notes that wildland fire "…ranks among the hazards of greatest concern for the City of Prince George, especially in neighbourhoods that border forested areas. Much of the 318 km^2 area within the city limits is provincial heavily forested Crown land. The potential safety challenges of wildland fires in rural and urban areas have been emphasized by the loss of structures and lives in other similar communities in BC and elsewhere."[60]

b. There is a reference to four incidents in BC including Silver Creek / Salmon Arm (1998), Okanagan (2003), West Kelowna (2009) and collectively Northern BC (2017 and 2018).

c. Vulnerabilities include essentially all of the City as well as the ten isolated neighborhoods listed below in Table 22.[61]

d. There is a long list of mitigation measures, including removing pine beetle affected trees, planting tree species which are more fire resistant, implementation of the 2019 Community Wildfire Protection Plan, and using tabletop exercises to develop evacuation plans.

Table 22: Isolated Neighborhoods in Prince George Susceptible to Interface Fires

Name of Road	Planning Area
North Kelly Road	Austin North
Old Summit Lake Road	Summit Lake
East Austin Road	Austin East
Landooz Road	Shelley
Hoferkamp Road	N. Nechako
Blackwater / Leslie Roads	Southwest
Western / Corral	Southwest
Cranbrook Hill	Foothills
Tabor Blvd.	Heritage
Ridgeview Drive	Hart Highlands

As noted above, the Province is expecting to introduce new emergency program legislation in the spring of 2023. The new statute will implement the Sendai Model and is integrated with the Province's commitments under UNDRIP. It will likely legislate a requirement for additional community risk assessments and more proactive risk and hazard mitigation. These changes are being driven, in part, by the series of high risk events experienced in the province since

[60] HRVA, at p. 44.

[61] HRVA, at p. 45.

2017, including major forest interface fires and flooding events, as well as the pandemic and the Heat Dome.

The NFPA has also addressed the need for more comprehensive risk management, with the rollout of *NFPA 1300 Community Risk Assessment and Community Risk Reduction Plan Development* (2020 ed.) ("NFPA 1300").[62] This standard was adopted in 2019 and has recently been used to assess the City of Yellowknife in 2022 for risks specific to the fire department.

NFPA 1300 includes the following definitions:

> **Community Risk**. Risk that pertains to the community, including the aggregate potential of loss or damage to critical infrastructure, individual properties, or stakeholders that could have a significant detrimental impact on the overall community.
>
> **Community Risk Assessment**. A comprehensive evaluation that identifies, prioritizes, and defines the risks that pertain to the overall community.
>
> **Community Risk Reduction**. A process to identify and prioritize local risks, followed by the integrated and strategic investment of resources to reduce their occurrence and impact.
>
> **Community Risk Reduction Plan**. A document that outlines the goals, objectives, programs, and resources used to reduce the risks identified by the community risk assessment.[63]

NFPA 1300 recommends that a Community Risk Assessment ("CRA") be conducted:

> "…every 5 years or more frequently based on community need," and that "…an annual review of the CRA shall be conducted to identify emerging trends that could impact the current CRR [Community Risk Reduction] plan and risk reduction programs."[64]

These timelines for updating and conducting CRAs are much shorter than is, in our experience, the common practice for how local governments manage their HRVAs. Given the experience of the past five years, the adoption by the City and the Department of the more frequent risk assessment model of NFPA 1300 is recommended (subject to any more stringent requirements that may be set under the new emergency management legislation).

[62] NFPA 1300 was developed by a large group of stakeholders with subject matter expertise including Deputy Chief Randy Minaker of the Port Coquitlam Fire Department and Deputy Chief Jim Jessop of the Toronto Fire Services as well as other subject matter experts from both Canada and the United States.

[63] NFPA 1300, ss. 3.3.2, 3.3.3, 3.3.4 and 3.3.6.

[64] NFPA 1300, s. 5.3.

10.1 Recommendations

#10-1: That the Department consider adopting NFPA 1300 as a model for Community Risk Assessment and Community Risk Reduction.

11.0 Fire Prevention Branch

The FPB is responsible for regular fire inspections and inspections on complaint, fire investigations, fire safety plan reviews, preparation and maintenance of pre-incident plans, and public education. The 2016 SOC Report included a number of recommendations related to the FPB including:

- fire bylaw updates - powers of entry for investigating fire hazards;
- plan checks for new construction;
- pre-incident planning responsibilities, verification and forms;
- assessment of FPB staffing levels;
- review of fire inspection responsibilities and inspection frequency; and
- clarifying requirements for fire safety plans.

The recommendations in the 2016 SOC Report are shown below with status updates provided by the Department during the 2022 review.

11.1 Fire Bylaw

> ***2016 Recommendation:*** *The Department should ensure that its powers of entry for investigating fire hazards on complaint or where the FPB or Department members have a concern, are clearly set out in the revised establishment and operational bylaw. The Department should develop clear operational guidelines for dealing with problem properties, including coordination with law enforcement and socials service agencies, where required.*

The Department reported that an updated bylaw is being prepared and will include the additional provisions recommended in the previous report regarding access to problem properties. The adoption of the revised bylaw will be delayed pending the implementation of the new *Fire Safety Act* by the Province.

The Chief Fire Prevention Officer (the "CFPO") advised that there is no operational guideline for dealing with problem properties and the current practice is to utilize the City building inspector, bylaw services, Northern Health and RCMP when assistance is required.

11.2 Fire Safety Plans

> ***2016 Recommendation:*** *In the updating of the Department's operational and establishment bylaw, ensure that there is clear language permitting the Department to require the submission of additional information with a fire safety plan, that is necessary*

for pre-incident planning, and that such information is submitted in an electronic format that will enable the Department readily to develop effective pre-incident plans.

2016 Recommendation: *The Department and City should consider requiring that the most significant industrial / commercial risks, which require the most detailed fire safety plans, have their fire safety plans certified by an external third party before submission for review by the Department.*

Fire safety plans have been completed by the Department and a contractor for all significant industrial and commercial risk properties in the City. Robert Furlong Designs, considered by the CFPO to be an expert in this field, completed most of the fire safety plans for the industrial complexes.

The Department has not implemented the recommended requirement for third party certification for fire safety plans. Rather, a policy has been implemented to issue letters of receipt for fire safety plans received from contractors, but those plans are not reviewed or utilized by the Department.

11.3 Plan Checking

2016 Recommendation: *Expand the FPB's role to include a plan check for new construction, with a focus on major commercial, industrial, public institutional and multi-family projects, to ensure compliance with the Fire Code and with the Department's operational requirements.*

2016 Recommendation*: That the FPB in cooperation with the Building Department implement a plan checking program for all new construction and major renovations in existing buildings. This may require additional training for the existing staff.*

The FPB initiated a plan check review program in late 2019 that includes the review of all building permit applications for fire code and fire bylaw compliance along with practical operational needs of the Department. To provide continuity between the Building Department and the Department, the CFPO is given access to the City building permit file and issued a TASK file, which must be signed off by the CFPO before the City issues the building permit.

The plan check review program has also been expanded and now includes the review of new subdivisions, variance permits, demolition permits and temporary use permits. Additional requirements needed to obtain the fire service building permit approval include a Construction Fire Safety Plan ("Safety Plan") and in some cases, a Registered Professional Protection of Adjacent Buildings Report ("Protection Report"). The CFPO reviews and accepts both documents and conducts site visits to ensure the Safety Plan and the Protection Report are followed during the above grade construction process. Prior to the occupancy permit being granted by the City, the FPB must complete a final fire inspection and if approved, sign off on the TASK file.

11.4 Pre-incident Planning

2016 Recommendation: *The FPB identify all properties in respect of which pre-incident plans should be created, and prioritize those properties based on risk.*

2016 Recommendation: *The Department should develop or acquire a user-friendly electronic template for pre-incident plans. The "D" shift crew at halls 3 and 4 should be trained to develop pre-incident plans from fire safety plan data. Duty crews should be responsible for developing pre-incident plans for simpler or more straightforward risks only, as determined by the CFPO.*

2016 Recommendation: *The FPB should remain responsible for developing pre-incident plans for all major industrial, commercial and institutional risks in the City.*

2016 Recommendation: *Before any pre-incident plan goes live, it must be checked through a physical inspection of the property in question. Pre-incident plans should be regularly reviewed as part of the annual fire safety inspection for each property for which they exist.*

The FPB has been tasked with the responsibility for the management, development and maintenance of pre-incident plans. Fire crews also play a role in the development and updating of plans during company inspections.

The CFPO reported that pre-incident plans have been completed for all inspectable properties and for several non-inspectable properties including townhouses and trailer parks. Pre-incident plans are developed and verified during fire inspections in accordance with the Department's OG 5.04.03, "Pre-Incident Planning Procedures."

The procedure for developing pre-incident plans by fire crews includes the completion of a checklist of items that are marked on an overhead photo of the building during the fire inspection (see Figure 26 and Figure 27 which follow). The plan is then submitted to the Chief Fire Prevention Officer and fire prevention office for review and then sent to administrative staff. Pre-incident plans developed by fire inspectors are submitted directly to administrative staff, who are responsible for issuing the final plan.

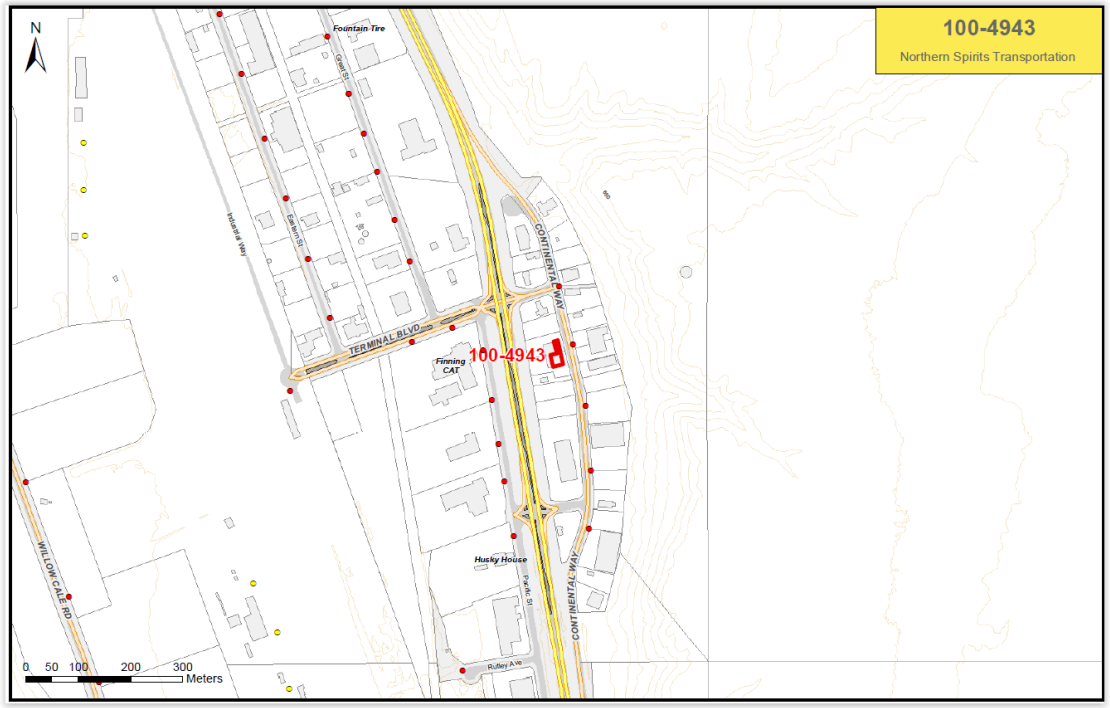

Figure 26: Preplan #100-4943.

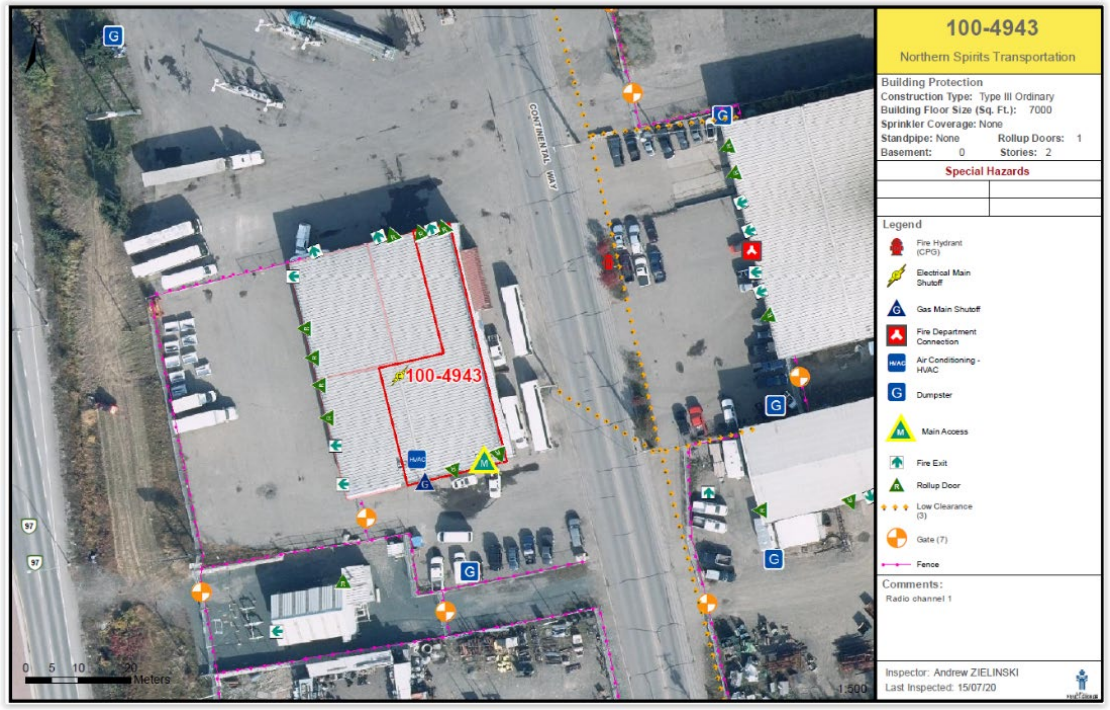

Figure 27: Preplan #100-4943.

The Department is reviewing the APX software program as a solution for pre-incident planning going forward. The benefit of this program is that it will allow inspectors and company officers to complete, review and update pre-incident plans using tablets or iPhones which are available on

each apparatus. This change would eliminate the administrative staff from the pre-incident planning process.

11.5 Staffing Levels

> ***2016 Recommendation:*** *The FPB requires a full complement of active staffing to meet its mandate and ensure the city meets its statutory obligations under the FSA. The Department should review whether some additional assistance is required to address the existing backlog in inspections.*
>
> ***2016 Recommendation****: That the FPB be fully staffed (4 FTEs) and that personnel on long term absences are replaced on a temporary basis until their return to active duty.*

The FPB is currently staffed with four full-time positions including the CFPO who reports to the Deputy Chief of Administration. Other staff in the FPB include one captain, one lieutenant and one fire Inspector. As recommended in the 2016 SOC Report, the division has been able to fill long-term absences through a six-month posting which has been used twice since 2016.

The Department's FPB staffing model has not changed for at least twenty years even though the responsibilities of the division have increased substantially. The following examples of these changes are not exhaustive but include:

- increases in the volume and complexity of fire and life safety inspections and fire investigations;
- increased plan checking;
- more comprehensive pre-incident planning;
- need for FireSmart programs;
- need to provide regular public education activities;
- increased administrative duties,
- technological changes; and
- the ongoing training, development and education required for fire prevention officers.

Other evolving issues that impact FPB resources include additional fire inspection training and oversight for company inspections; safety inspections in homeless camps; dealing with unauthorized suites; and the increased allocation of stretched resources needed to coordinate and work with other City departments and outside agencies.

11.6 Fire Inspections

Company Inspections

> ***2016 Recommendation:*** *The Department should review the conduct of fire inspections by duty crews and increase the number of inspections and reinspections that are assigned to such crews.*

Company inspections were implemented for all fire halls following the 2016 SOC Report recommendations. The number of inspections for each hall varies based on the property classification in their coverage area and the number of on-duty members.

- Hall 1: 10 to 12 inspections are assigned per month per shift.
- Hall 2: 4 to 12 inspections are assigned per month per shift.
- Hall 3: 2 to 5 inspections are assigned per month per shift.
- Hall 4: 1 to 4 inspections are assigned per month per shift.

> ***2016 Recommendation****: That duty crews are assigned all lower risk inspections and those higher risk inspections that the Chief Fire Prevention feels are appropriate for duty crews. Those high-risk buildings not assigned to the duty crews will remain the responsibility of the FPB. This may require additional training for existing staff.*

Company inspections for Halls 3 and 4 are currently composed of lower risk buildings with annual inspection frequency. The CFPO has assigned one inspector to provide inspection training to the fire crews which has resulted in a higher level of quality for inspection reporting. The inspector also reviews the fire inspections and deals with any issues such as incomplete forms, missing reinspections or questions.

Frequency of Inspections

> **2016 Recommendation:** *With the increase in the number of inspections by duty crews, the FPB should review the inspection frequency. The goal should be to ensure that all inspectable properties are reviewed at least* annually; where possible, the highest risk properties should be reviewed more frequently.
>
> **2016 Recommendation**: *That the City of Prince George develop a policy whereby all lower risk properties are conducted on a bi-annual [i.e., biennial] basis and that all high-risk properties are conducted on an annual basis.*

Table 23 below shows the building classifications and the current frequency of inspections. The Department reported that triennial inspections have been eliminated and noted an exception to the frequency for pulp and paper mills which are now inspected every six months. The data provided to the Consultants show that, in 2022, there was a total of 2,744 inspectable properties in the City.

Table 23: Frequency of Inspections

Classification	Description	Frequency
A1	Performing Arts	Biennially
A2	Other Assembly	Annually
A3	Arena	Biennially
A4	Open Air Assembly	Biennially
B1	Detention Occupancy	Annually
B2	Treatment Occupancy	Annually
B3	Care Occupancy	Annually
C	Residential	Annually
D	Business	Biennially
E	Mercantile	Biennially
F1	High Hazard Industrial	Annually
F2	Medium Hazard Industrial	Biennially
F3	Low Hazard Industrial	Biennially

Table 24 shows the fire inspection statistics based on the number of compliant and non-compliant inspections. The number of unsatisfactory initial inspections has increased slightly which the CFPO attributes to the increased training provided to engine companies, who are now better at identifying violations.

Table 24: Fire Inspection Compliance Report

Year	Reinspection[65]	Satisfactory	Unsatisfactory
2019	No	1,650	146
2019	Yes	154	32
2020	No	1,798	176
2020	Yes	165	51
2021	No	1,745	185
2021	Yes	155	50

[65] The Reinspection 'No' row indicates initial property inspections completed and the number of those that were unsatisfactory; the Reinspection 'Yes' row indicates the number of properties requiring a reinspection (return to property to review updates on deficiencies identified during initial inspection), and how many of those still did not achieve compliance.

11.7 Public Education

The 2016 SOC Report did not include any specific recommendations for public education activities, but the Department provided a comprehensive list of the current activities included in their annual program. One inspector is responsible for the majority of the public education programs and utilizes the other inspectors and fire crews when required. Public education events are completed during regular work hours as much as possible, but some are conducted during evenings and weekends depending on the venue and target audience.

The FPB also delivers a wide range of fire safety education and training to at risk populations and the public through the following programs:

- safety for seniors;
- safety for school children through the Hazard House program;
- mental and physical disability programs through College of New Caledonia;
- fire safety training for Home Alone and babysitting courses;
- fire extinguisher education – theory and practical;
- fire safety plan training;
- Fire Warden/Floor Warden training;
- Fire Smart;
- fire drill Draining;
- Juvenile Fire Setter – usually requested by school and/or parents;
- Fire Chief for a Day;
- Fire Prevention Week; and
- attendance at community or business events.

11.8 Recommendations

#11-1: The Department should review the staffing levels and responsibilities allocated to the Fire Prevention Branch and make the necessary changes to ensure that adequate resources are available to meet the mandate of the division.

12.0 Facilities, Apparatus and Equipment

12.1 Fire Halls

The location and suitability of the Department's fire halls were reviewed by DMA in the 2016 SOC Report. That report recommended Hall 1 should be moved south of its current location to improve coverage in the industrial properties and to better meet the recommendations of the Fire Underwriters. This recommendation was adopted by the City and the relocation and construction of the new fire hall was completed in December 2020. The new facility replaces the outdated hall located at 733 Dominion Street and improves the Department's eight-minute response time within the City core. The new state-of-the-art building includes five drive-thru apparatus bays, a hose tower, storage and work areas, and meeting rooms. It houses Administration, Fire Prevention, Fire Dispatch and Suppression divisions as well as the Emergency Operations Centre.

Figure 28: Hall 1 – 2012 Massey Drive

The 2016 SOC Report found that Halls 2, 3 and 4 were suitably located for responses within their respective primary response zones. The location and general details of the halls are shown below.

Hall 2 was constructed in 1968 and includes two primary apparatus bays plus two bays for reserve apparatus. The building is in fair condition and houses a suppression crew of four members. A burn building and pumping pit is located at the rear of the property. Annual facility maintenance is provided by the City and there are presently no planned renovations for the building.

Figure 29: Hall 2 – 3999 5th Avenue

Hall 3 was constructed in 1976 and includes two double depth apparatus bays that house a Quint, Water Tender and utility apparatus. The fire hall is in good condition and there are no planned renovations for the building.

Figure 30: Hall 3 - 3778 Konrath Road

Hall 4 was constructed in 1976 and includes two double depth apparatus bays that house a Quint, Water Tender and utility apparatus. The facility is in good condition. No renovations are planned and annual facility maintenance is provided by the City.

Figure 31: Hall 4 - 6555 Kelly Road South

12.2 Fire Apparatus

The Department's inventory of fire apparatus is show in the table below. All frontline apparatus meet the requirements of NFPA1901 *Guidelines for Apparatus Replacement.*

Table 25: Fire Apparatus

Unit	Year	Make	Type	Location	Tank	Pump	Class A Foam Tank	Built-In System	Mushroom Bladder Bags
E51	2001	Spartan	Pumper	Hall 1	500	1250	20 IG	Foam Pro	n/a
E11	2013	Rosenbauer	Pumper	Hall 1	444	1502	50 IG	Foam Pro	n/a
R11	2019	Rosenbauer	Commander	Hall 1	n/a	n/a	n/a	n/a	n/a
E21	2006	Cyclone II	Pumper	Hall 2	500	1500	25 IG	Foam Pro	n/a
L21	2020	Rosenbauer	Cobra Platform	Hall 2	300	1750	30 IG	Foam Pro	n/a
L31	2015	Rosenbauer	Quint	Hall 3	600	1506	48 IG	Foam Pro	n/a
T31	2007	Freightliner	Tender	Hall 3	2500	425	n/a	n/a	1500 IG
E41	2008	Rosenbauer	Pumper	Hall 4	600	1500	25 IG	Foam Pro	n/a
T41	2018	Rosenbauer	Tender	Hall 4	2500	840	n/a	n/a	1500 IG
T51	1996	Freightliner	Tender	Hall 4	2500	425	n/a	n/a	1500 IG
E52	2004	Superior	Pumper	Hall 4	500	1500	25 IG	Foam Pro	n/a

The Department's service vehicle inventory is shown in the table below.

Table 26: Service Vehicles

Vehicle	Unit	Year	Make	Type	Location
Assistant Chief 1	8544	2009	Chevrolet	Suburban 4X4	Hall 1
Chief 1	8547	2013	Dodge	1500 4WD Club Cab	Hall 1
Chief 2	8541	2008	Ford	Expedition	Hall 1
Chief 3	8540	2008	Ford	F150 4X4	Hall 1
Chief 4	8531	2007	Jeep	Liberty	Hall 1
Chief TO	8542	2008	Ford	F150 4X4	Hall 1
Fire Investigation	8549	2013	Blazer Cargo Mate	Trailer	Hall 1
Inspector 11	8537	2007	Jeep	Liberty	Hall 1
Inspector 12	8538	2007	Jeep	Liberty	Hall 1
Inspector 13	8545	2010	Dodge	Grand Caravan	Hall 1
Investigation 13	8543	2008	Ford	F150 4X4	Hall 1
Service 11	8501	2001	Ford	F350 4X4	Hall 1
Antique	8599	1927	REO Speedwagon	Pumper	Hall 3
Hazmat	8546	2008	Mirage	Hazmat Trailer	Hall 4
Hazmat 1	2437	2000	Ford	F550 Super Duty	Hall 4

12.3 Equipment

The Department maintains detailed equipment inventory lists for all apparatus and service vehicles. The crews perform daily checks and maintain the appropriate records to ensure the items are properly stored, cleaned and operational.

Auto Extrication

The Department completed a major auto extrication tool replacement in 2022 that included:

- 5 sets of Holmatro hydraulic equipment including pump, hose, spreader, cutter and power ram;
- 3 complete sets of Holmatro Pentheon including cutter, spreader and ram;
- 2 large Holmatro Pentheon combination cutter/spreader tools;
- 1 small Holmatro Pentheon combination cutter/spreader tool;
- 3 sets of hydraulic lifting bags; and
- 3 sets of vehicle stabilization bars.

SCBA Program

The Respiratory Protection Program OGs (1.02 and 1.02.01), specify that the program is under the direct control of the Deputy Chief – Operations. The Department completed a major upgrade of the SCBA equipment in 2020 and 2021 that included the purchase of:

- 60 - Scott X3 Pro suppression SCBA;
- 8 – Scott X3 Pro Hazmat SCBA;
- 4 – Scott Ska-Pak Plus confined space SCBA;
- full upgrade to Scott AV 3000 HT SCBA masks;
- 130 - Scott 4.5 air cylinders;
- 1 - Jordair two bottle filling station (Hall 4); and
- 1 - Jordair eight bottle filling station (Hall 1).

12.4 Asset Maintenance Programs

Maintenance for fire apparatus and equipment are performed as follows:

- fire apparatus and vehicles:
    - drivers are responsible for conducting daily fire apparatus pre-trip inspections and to report any defects to the Assistant Chief;
    - apparatus and vehicles are serviced by CUPE EVT certified fleet technicians; and
    - pump testing is performed in-house by Fleet EVT technicians; Ladder testing is conducted annually by fleet services and an external non-destructive testing contractor.
- SCBA equipment is serviced in-house by Scott Bench Tech certified technicians;
- PPE cleaning is completed in-house using commercial decontamination washers located in all four fire halls.
    - basic cleaning and annual inspections are performed in-house by qualified Gear Team Leads; and
    - advanced cleaning, inspections and repairs are sent out to an external service contractor.
- annual fire hose testing is completed in-house by hose/appliance/nozzle Team Leads; and
- record-keeping for all maintenance and repair is tracked through various Excel spreadsheets.

13.0 Training and Qualifications

The fire service has made significant changes over the past decade, particularly in the area of regulations and standards related to the management and administration of the service (such as the increased requirement for record keeping). Notwithstanding those improvements, the key to ensuring effective emergency ground operations, and the safety of firefighters and members of the public, continues to be effective and comprehensive training. Each operational member of a fire department must have the appropriate level and types of training to fulfil the roles and tasks he or she will be assigned at an emergency incident. To enable the Department to manage its obligations effectively, it is vital to ensure that all firefighters are trained to the appropriate level for the operations that they undertake. Appropriate training will improve firefighter safety and effectiveness and limit liability concerns for both the Department and the City.

The need for training needs to be examined in light of the risks faced by fire service personnel. The nature of modern construction techniques has amplified the risks faced by firefighters and the public. Lightweight construction components and contents made of composites, synthetics and other unusual fuels, cause fires to get hotter faster and with less predictability, creating a much more volatile fire environment than that of the past. Although firefighters are now better equipped, fires today pose a greater risk than those faced in the 1970s and 1980s.

Aggressive interior operations such as fire attacks and primary searches require firefighters to enter a hazardous environment, dramatically increasing the potential for encountering adverse fire events such as flashover, smoke explosion, or backdraft, along with exposure to a variety of other perils, thereby posing the most significant risk to firefighters involved in fire ground operations. A line of duty death or serious injury is a risk that all fire departments must seek to avoid. In the event of a serious injury or line of duty death, the impact on the individuals involved, their families and the Department can be severe and long lasting. There is also a significant potential for liability for the Department, its officers, and the City.

As a result, the fire service is increasingly focused on issues that affect firefighter safety, including the need to effectively manage and control interior operations, as departments seek to mitigate the risks to which firefighters are exposed. One of the primary ways to improve firefighter safety is to increase the level of comprehensive emergency incident management training – the knowledge and various skills required to perform a variety of supervisory functions safely and effectively at emergency incidents.

Many fire departments also provide other emergency response services in addition to fire suppression, such as first medical responder (“FMR”), vehicle extrication and rescue, high and low angle rescue, confined space rescue, hazardous materials responses, and other specialty services. Each of these service specialities, however, requires proper training for the firefighters involved, and appropriate incident scene management training for the officers. The time and costs involved in achieving both the initial qualifications required to deliver the service and then manage the on-going maintenance training necessary to keep the skills current, can prove challenging.

This issue of appropriate training levels also needs to be considered in the context of WorkSafe BC requirements and the obligation of employers to ensure that their workers are properly trained for their duties and supervised while performing them. An employer that fails to train and supervise its employees properly is in breach of the *Workers Compensation Act* (B.C.). The goal, therefore, should always be to maximize training for all firefighters, and to limit their fire ground operations to those tasks for which they have been properly trained. To put it another way: firefighters should NEVER be permitted to exceed their training.

13.1 Applicable Standards

Under the *Fire Services Act*, the Fire Commissioner is responsible for issuing training standards for "fire services personnel" in the province.[66] At the time of the previous standards of cover review, a major set of new Provincial Training Standards had just been issued in 2014, which was then updated and revised in a second edition in May 2015.[67] A third edition of such standards, the *British Columbia Structure Firefighter Minimum Training Standards*, was issued at the end of September 2022 (the "2022 Edition"): this analysis, however, was conducted on the basis of the 2015 Edition, which was in effect when the on-site and documentary reviews were conducted.

The Provincial Training Standards contemplate that a fire department may deliver one of three possible levels of service, and establishes the principal minimum training required to qualify for each level of service:

> **Exterior Operations** – includes fire fighting activities restricted to the control and/or extinguishment of fire from an external position to the building or object; where a fire department does not undertake interior attack or rescue operations on a fire-involved structure or object, or operate in an atmosphere that is "immediately dangerous to life and health".
>
> **Interior Operations** – where a fire department, in appropriate circumstances, will enter a fire-involved structure or object to undertake fire suppression activities or conduct rescue operations. Interior operations by these departments are generally to be limited to smaller structures, such as single-family dwellings and vehicles, except where specific hazard assessments and planning have been undertaken in respect of more complex risks.
>
> **Full-Service Operations** – a full-service department is equipped, staffed, and trained to provide a full spectrum of fire services by firefighters and fire officers who are trained to the competencies outlined in the NFPA 1001 FF-II and relevant NFPA 1021 Fire Officer

[66] *Fire Services Act*, s. 3(3)(b). This power and obligation is continued in the new *Fire Safety Act*. The term fire services personnel is defined in the *Fire Services Act*: it covers essentially all fire departments undertaking structure firefighting, but excludes fire suppression operations undertaken by Wildfire Management Branch under the *Wildfire Act* (B.C.).

[67] *British Columbia Fire Service Minimum Training Standards: Structure Firefighters – Competency and Training Playbook* (September 2014; second edition – May 2015), (the "2015 Edition")

standards; and that such activities are based on response protocols which include appropriate staffing levels, and number and type of apparatus on scene.

The Provincial Training Standards establish an explicit requirement for the "Authority Having Jurisdiction" over a fire department to expressly set the level of service that is expected to be provided by its fire department. The training, organization, staffing, equipment, and apparatus required to support the chosen level of service will all then flow from that determination. The 2022 Edition has reiterated this requirement.

Even the 2022 Edition is not yet a complete system: it does not cover all emergency scene functions and responsibilities (though it is more expansive than its 2015 predecessor). Although there are several indications that the NFPA standards are expected to apply to other functions (which was what was required by the previous Minister's Order on training),[68] ambiguity now exists as to the standards applicable for a wide range of firefighter training.

Given the requirements of the *Workers Compensation Act* (B.C.), which imposes a positive obligation on employers to train workers appropriately, and given that the only recognized standards that exist in North America for the training of fire services personnel are those established by the NFPA, the better approach is to assume that those standards constitute an "industry best practice" and should be used to guide all aspects of the Department's operations. Should a local government choose to adopt a different standard (or no standard at all) in relation to the training applicable to other fire service functions, if there is a serious accident or line of duty death which relates back to training issues (as occurred in the Clearwater case[69]), that local government will be faced with the unenviable task of justifying the approach that it has taken in circumstances where there is clear evidence of a problem. The Department, as a matter of course, uses the relevant NFPA standards in the training of its members and officers.

The Provincial Training Standards also establish minimum standards for individuals instructing and evaluating competencies. The 2015 Edition clarified that no third-party certification is required for in-house trainers. Rather, they must be "qualified" in the subjects or areas they are teaching. That means that they must have already met the requirements for the competency they are teaching, which is achieved when they have been suitably evaluated so as to demonstrate they meet the requirements of the given standard. Proper training processes comprise the following:

- the training must be delivered, and evaluations undertaken by a qualified instructor. The instructor's qualifications to teach a particular subject or job performance requirement

[68] The 2015 edition of the Provincial Training Standards did not entirely clarify the matter, though it even more clearly suggests that the appropriate standards applicable to matters not yet covered, are those set by the NFPA. The previous Minister's Order on training - MO-368 (December 2002) – incorporated by reference all NFPA standards.

[69] The death of fire fighter Chad Schapansky in Clearwater, BC in 2004 which resulted in a Coroner's report "Judgement of Inquiry into the Death of Chad Jerry Schapansky". This report found that the Clearwater fire department lacked written operational guidelines governing interior attacks; it could also produce no training records for accredited training done by the interior attack team, rapid intervention team or fire officers in charge.

("JPR") under the Provincial Training Standards or an NFPA standard, need to be provable (particularly where training is being delivered in-house). It must be possible to show that they have already met the requirements of the competency being trained and be considered by the department to be capable of providing instruction;

- each participant in the training needs to be evaluated, and his or her results duly recorded on an individualized basis. Ideally, the evaluation process should be described as part of the training program or evident from the records kept; and

- assessments and evaluations of competencies can be carried out internally by the AHJ so long as the evaluation instruments follow the criteria of the Provincial Training Standards (and other applicable NFPA standards), and that the oversight of the evaluation processes is the responsibility of the Training Officer;

- an individual who is responsible for conducting specific evaluations of another firefighter's or fire officer's competency must already have achieved that competency and be considered by the department to be capable of conducting such evaluation.

Another critical requirement in the Provincial Training Standards is that fire departments maintain accurate and current individualized records of each member's training and qualifications, which show compliance with the minimum and other applicable training standards:[70]

- It is the responsibility of all fire departments/AHJs to be able to accurately identify record, edit, and report out on a complete list of training records for each individual firefighter including specific training subjects covered at each training session. All training records must be kept in accordance with the requirements of the *Workers Compensation Act* (B.C.) and related regulations, and any other regulatory requirements; and

- the subject matter of the training and associated evaluation process need to be clearly described in the records. If the training relates to a particular JPR under the Playbook or an NFPA standard, that JPR should be identified along with the specific evaluation instrument, such as a skills checklist, that was utilized.

This section of the report will examine the Department's training processes in the context of its operational requirements, declared service level and the associated standards. It will also review the training facilities, the current levels of qualifications, the Department's training and evaluation processes, and the training records.

The Consultants attended site visits/meetings with the Fire Chief and Deputy Chief during the month of May 2022, along with Zoom meetings with the Deputy Chief (previously Training

[70] 2015 Edition, pp. 4 and 6. The 2015 Edition's requirements were drawn from and reflect the records keeping requirements established under the *Workers Compensation Act* and regulations. The 2022 Edition also notes the need to keep property training records, but is less clear, in some respects, than its predecessor as to what those records should look like.

Captain) and the Chief Training Officer in the month of July 2022. During these meetings, various aspects of the Department's training processes were reviewed, including the program itself, as well as training records. As a part of the site visits, the Consultants also toured the service area, to better appreciate the nature of the Department's operational environment, and reviewed the Department's training area and facilities.

This section of the report references various NFPA training and related standards. A list of those standards can be found in Appendix 4.

13.2 Service Levels and Applicable Standards

The City is the AHJ in relation to the Department, and the service level that has been authorized by Council is "Full-Service Operations". A full-service department is required to be equipped, staffed, and trained to provide a full spectrum of fire services by its firefighters and fire officers. Firefighters must meet the competencies outlined in the NFPA 1001 Firefighter standard, and fire officers must meet the relevant NFPA 1021 Fire Officer standards, along with other NFPA standards, as identified in the current job descriptions and collective agreement.

Full-service departments are also required to have and to use written OGs that describe advanced training in fire ground operations activities.

A full-service department is required to be organized such that its suppression activities are based on response protocols that include appropriate staffing levels, as well as number and type of apparatus on scene for the services that they provide.

For a career department, the NFPA 1710 standard provides guidance on these performance or response objectives. For the most part, the standard is based on a department's response capability and the arrival time of the first due engine company and the second company, as well as the initial full first alarm response from the time of the reporting of the alarm. A department's ability to meet these response objectives will vary with staffing levels, alarm handling times, and turnout and travel times.

For example, fire suppression operations for a simple two-storey single-family residential dwelling (approximately 2,000 sq ft.), with no basement or adjacent exposures, should be organized to ensure that the department's fire suppression capability encompasses deployment of personnel, equipment, and resources for an initial arriving engine company, a second company, and the initial full first alarm assignment, such that as a minimum the following responses can be achieved 90% of the time:

- First due engine company (minimum 4 personnel) – 6 minutes;
- Second due company (minimum 4 personnel) – 8 minutes; and
- Initial full first alarm assignment (minimum 16 personnel) – 10 minutes.

"In addition, given the requirements of NFPA 1500, and those of WorkSafe BC regarding entry into fire-involved structures,[71] a Rapid Intervention Team ("RIT") must be established within 10 minutes of the first team's entry, or before a second team can make entry. As such, to conduct initial interior operations safely with two or more suitably staffed teams (3 or 4 firefighters each), a RIT will be required, and therefore, all personnel engaged in interior operations must also meet the competencies required for RIT as identified in the Interior Operations section of the Provincial Training Standards .[72]

Given that many single-family residential structure fires involve buildings much larger that 2,000 sq ft. (2,500 – 3,500 sq ft. is not uncommon), many with basements and adjacent exposures, along with other complexities and the need to properly address firefighter rehabilitation, a preferred and more realistic response is to have an additional one or two companies, 4 to 8 personnel available on duty, respond to support/assist the initial first alarm assignment within the next 6 to 8 minutes, resulting in a total of 20 to 24 personnel at the incident.

Given the Department's current staffing model, which is typically 19 members on shift including the Assistant Chief, and barring one or more crew(s) attending another response which results in only 15 to 17 members available for a working structure fire, the Department may only just meet the minimum requirements, and will not be able to meet the preferred response objectives from its initial response model of 19 personnel on duty. As such, the Department relies heavily on callback of off-duty members to achieve more than 17-19 operational personnel at a working structure fire of any significance.

Callback of members to alarms is becoming an increasingly significant problem, as many members are overburdened with the continued need for overtime for both alarm responses and training programs.

The services currently provided by the Department include:

Basic Fire Suppression:

- Firefighters
- Team Leader/Company Officers and an Operational Assistant Chief
- Emergency Vehicle Driver/Operators ("EVD/EVO")
- Rapid Intervention Team ("RIT")

Specialty Firefighter Skills:

- Emergency Medical Services ("EMS") – Emergency Medical Responder ("EMR") level

[71] OH&S Regulation, s. 31.23

[72] In the 2015 Edition of the Provincial Training Standards, the training requirements for member of a RIT include those of an Interior Operations firefighter, plus various competencies in *NFPA 1407 - Standard for Training Fire Service Rapid Intervention Crews*.

- Hazardous Materials Response – operations and technician level
- Technical Rescue Responses:
    - Passenger Vehicle Rescue/Extrication – operations level
    - High/Low Angle Rope Rescue – operations and technician level
    - Tower Crane Rescue – operations and technician level
    - Confined Space Rescue – operations and technician level
- Wildland/Urban Interface – BC Wildfire S100 level

The applicable standards and associated requirements for training and development of Department members should include the following:

- The Playbook (which encompasses a range of NFPA standards in addition to those set out below);
- NFPA 1001 – Firefighter Level I and II;
- NFPA 1002 – Emergency Vehicle Driver and Operator (EVD and EVO);
- NFPA 1021 – Fire Officer Level I, II, III or IV (as per the Department's job descriptions);
- NFPA 1521 – Incident Safety Officer;
- NFPA 1041 – Fire Service Instructor I or II (as per the Department's job descriptions); and
- EMS – EMR level

The Department currently meets these requirements for firefighter and fire officer training. In addition, it also meets industry standards for EMS training, which are prescribed by BCEHS.

The NFPA standards for various specialty services typically contemplate three levels of competency: awareness, operations, and technician. The higher levels are more costly to attain and maintain, as they require more initial and maintenance training (and, potentially, more equipment). For specialty teams and responses to other hazards, the following training levels are suggested, given the Department's operational environment:

- NFPA 1072 – Hazardous Materials: operations mission specific and technician level;
- NFPA 1006 – Technical Rescue:
    - Passenger Vehicle Rescue/Extrication – operations or technician level;
    - High-Angle Rope Rescue – operations or technician level;

- Confined Space Rescue – operations or technician level;
- Tower Crane Rescue – operations or technician level;
- Trench Rescue – operations or technician level;

- Wildland/Urban Interface – WSPP-WFF1 (formerly S100 & S185) and WSPP-115 – Interface Structural Protection for Structural Firefighters (formerly S215).[73]

13.3 Department Training

As noted above, the Department's current staffing model has three exempt officers - the Fire Chief and two Deputy Chiefs – on day-shift hours, Monday to Friday. The roles of these exempt Chief Officers are principally administrative and fire prevention in nature, rather than operational.

The Department's operational organizational structure (suppression) currently includes:

- one Captain on each platoon/shift at each fire hall;
- one Lieutenant on each platoon/shift at Hall 1 (a relatively new position with no job description);
- one Assistant Chief on each platoon/shift at Hall 1; and
- three Firefighters on each shift at three of the fire halls, and four Firefighters on shift at Hall 1.

With vacations and other book-offs, there are typically 13 on-duty firefighters on each shift, along with four Captains. one Lieutenant, and the Assistant Chief for a total of nineteen members on-duty per shift across the four fire halls.

To support the training and development needs of the Department, there is one Chief Training Officer position ("CTO"). The CTO is supported by a Training Captain position, who assists with the training processes and programs.

The CTO is responsible for the planning and overall management of the Department's training portfolios, ensuring the Department's four shifts operate in a cohesive manner. The CTO is also responsible for determining the Department's training needs, developing training programs, planning, organizing, and directing training activities, and evaluating for continuity of training for the four shifts. In addition to scheduling training, the CTO is also responsible for conducting some aspects of training and for maintaining the Department's training records.

The required training levels are primarily determined by the Department's operational services mandate and the response requirements of the community as noted above. The nature of these

[73] The S-100 standard is the minimum requirement recognized by Wildfire Service, and meets the training requirements for forestry workers under s. 26.3(1) of the OH&S Regulation.

services will determine the level of qualification to be achieved, the associated training programs required, and the manner in which the required competencies will need to be maintained. Given the declared operational service level – Full-Service Operations – along with the additional specialty services the City has determined the Department will provide, the Department's OGs need to address the full range of fire and emergency response activities that may be undertaken.

The Department does not currently have any mutual aid agreements in place with neighbouring fire departments. As such, there has been no joint training with neighbouring departments.

13.4 Training Facilities

The majority of required training for the Department's firefighters and fire officers is conducted at the Hall 1 site. The training classroom is a good size and well arranged. It is equipped with the required teaching aids and suitable for moderate sized groups.

The outdoor areas available for training are inadequate for basic training skills, and not suitable for larger, scenario-based, multi-unit/multi-storey exercises. The outdoor sites are also not adequately situated/configured for driver training, hazardous materials exercises, or any of the other specialty training disciplines. The need for an appropriate training facility has been noted and discussed in section 7.4, above.

13.5 Current Levels of Qualification

The required qualifications for each of the following roles within the Department, along with the qualifications of the incumbents, are set out in the table below.

Position(s)	Required Qualifications	Current Qualifications of Incumbent(s)
Chief Officers		
Fire Chief	• NFPA 1021 Fire Officer II ("FO-II") or higher • Diploma or degree in Fire Leadership or related discipline	Meets this requirement
Deputy Chiefs	• NFPA 1021 FO-II • Diploma or degree in Fire Leadership or related discipline	Both meet this requirement.
Operations Assistant Chief	• NFPA 1021 FO-II • Five 3-credit post-secondary courses	All meet these requirements.

Position(s)	Required Qualifications	Current Qualifications of Incumbent(s)
Acting Assistant Chief	• NFPA 1021 FO-II • Two or more 3-credit post-secondary courses	All meet these requirements.
Fire Prevention Chief	• NFPA 1021 FO-II • Five 3-credit post-secondary courses	Meets these requirements.
Company Officers		
Hall Captains	• NFPA 1021 Fire Officer I ("FO-I")	All meet these requirements.
Hall Lieutenants	• NFPA 1021 FO-I	All meet these requirements.
Other Officers		
Chief Training Officer	• NFPA 1021 FO-II • NFPA 1041 Fire Service Instructor ("FSI")-II • Qualified in at least two specialty disciplines • Five 3-credit post-secondary courses • Training Captain for minimum of one year	Meets these requirements.
Training Captain	• NFPA 1021 FO-I • Active member in at least one specialty team, or • A qualified instructor for EMS, EVD, or Vehicle Rescue	Meets these requirements
Fire Prevention Captain	• NFPA 1021 FO-II	Meets these requirements.
Fire Prevention Lieutenant	• NFPA 1021 FO-I	
Firefighters		
Firefighters	• NFPA 1001 FF-II	All firefighters meet these qualifications.

13.6 Training and Evaluation Processes

The Consultants did not witness actual operational training of Department members. As such, the following observations and comments are based on the various interviews and discussions

held with the Fire Chief, Deputy Chiefs, Chief Training Officer, and Training Captain as an indicator of the level of operational readiness of the Department to carry out its mandated emergency response services.

The current Chief Training Officer has been responsible for the Department's training for the past three years. Much of this period has been adversely affected by the restrictions accompanying the pandemic. The CTO develops an annual training plan, which consists of monthly training schedules, which are then broken down into weekly schedules across the four shifts. As such, most training requirements are identified in the monthly and weekly calendar put out to the Operations Assistant Chiefs, suppression Captains and Lieutenants.

The Department strives to meet the proficiency requirements of the applicable NFPA standards for substantially all operational skills. Where possible, these qualifications are achieved through on-duty delivery of the initial training, as well as the maintenance of those competencies and skills through subsequent on-duty training processes. The issue of maintenance training is considered in greater detail, below.

This approach, however, is complicated given the limited number of personnel on duty at any time, and the inability to remove these members from a primary response role to permit them to conduct the necessary training (whether initial or maintenance training). Thus, maintaining and/or increasing the level of proficiency in any area of service delivery is challenging. Given the limited time available for on-duty training, members often have to be brought in for off-duty training .

As such, many of these training endeavors, both the initial and subsequent maintenance training are conducted on the members' days off using the Accumulated Time Off (ATO) approach. This is accomplished by having the member attend work on one or more of their days off to receive the training; however, this then impacts the member's number of days off and as such is often not an option, and therefore the sessions are not well attended.

This approach also relies on the trainers working on their day off to conduct the training. Training sessions are a half-day so that member can then work their night shifts; if they were trained the whole day, they would need to have the night shift off.

The CTO indicated a growing reluctance of members to attend such off-duty training sessions, particularly given the number of overtime shifts they are expected to fill (due to book-offs for a variety of reasons), along with the call-out time for emergency responses. The reluctance of members to train on their days off negatively impacts the Department's ability to raise members' qualification levels and to keep qualifications current for several of the specialty services provided by the Department.

Without additional personnel to support on-duty training to recognized levels of proficiency, in the form of training personnel and time for members to train on shift, and to then maintain these skills through on-duty training, some programs may not be able to be maintained to the required proficiency levels. Given the challenges it faces in meeting its training requirements the Department will need to review whether it can maintain its service levels in each of the various

specialties, or whether some of these may need to be trimmed back to a lower level of qualification. This assessment will have to be made in line with the mandate for service established by the City for the Department.

The training division has recently implemented a new approach on a couple of occasions, such as for the vehicle rescue skills, by providing the maintenance training on duty using the flex members on shift to free up a given crew. Barring a significant incident occurring that day, this approach better enables them to take part in this training without interruption.

This approach can not be used all the time, and additional staffing is the better solution to achieving the specialty training and the associated maintenance training required. An additional engine company at Hall 1 would help support the Department's training needs, but allowing the extra unit to provide coverage at the other Hall, while that Hall's members are receiving their on-duty training.

The current training levels for the services provided by the Department are set out below.[74]Analysis of any fire service standards applicable to these training levels required to achieve the Department's response requirements must also consider any WorkSafeBC requirements.

As such, we would recommend that the Department undertake an internal review of all services currently provided to determine:

- if the service needs to be provided by the Department;
- the required training levels necessary to provide that service; and
- the actual funding and staffing needed to provide that service including equipment, initial training and on-going maintenance training, at the selected level.

For all of its training, whether provided in-house or by external third parties, the Department also needs to ensure that members are formally evaluated against the relevant standard, and the results of such evaluation consistently recorded on an individual basis.

13.7 Firefighter/Fire Suppression Training

Basic Fire Suppression

As a Full-Service Operations level department, currently all new recruits/members are required to meet the NFPA 1001 Firefighter II certification, which includes hazardous materials at the operations level, when they are hired. As such, the Department meets the requirements for a Full-Service Operations department as established by the

[74] For most specialty services (e.g., Hazmat), the NFPA standards have three qualification levels: "Awareness," "Operations," and "Technician" (in ascending order or level of required training).

Playbook. Included in this fundamental fire suppression training and qualification are the various aspects of live fire training and the associated fire ground skills.

Once hired, all new recruits take part in Probationary Firefighter program over the course of their first 12 months with the Department. During this time, an initial recruit training program of 12 weeks is utilized to assess and augment their basic firefighter skills such that they are refreshed and evaluated to ensure their capability for assignment to an on-shift platoon. During this time, all new recruits also take part in a 2-day apparatus driver/operator program.

Upon being assigned to a platoon, they take part in ongoing skills maintenance and associated assessments/evaluations of their performance over the course of the first year. This ongoing training is conducted by the on-shift Company Officers and firefighters, while being monitored by the CTO and Training Captain.

Emergency Medical Services

All members are trained to the EMR level. The EMR training is provided in-house with instructors and evaluators certified through the Red Cross EMR program. All evaluators are EMA licenced to conduct in-house evaluations (2 days) to achieve and maintain the EMA qualification through the provincial Emergency Medical Assistants Licensing Board, which is renewed every 5 years. This qualification must be maintained with 20 education credits and 20 patient contacts per year.

Emergency Vehicle Driver/Operator (EVD/EVO)

The Department has upgraded its previous in-house training program to meet the requirements of the NFPA 1002 standard for the driving and operating of its pumping and aerial apparatus. This program is now conducted by six new on-duty instructors qualified to the NFPA 1002 requirements through the Viera Pro Board accredited program, training the members in the basic skills, with specific members trained for particular apparatus. The Department is now in the process of revamping/developing an in-house assessment and evaluation process to ensure the members continue to meet he requirements of NFPA 1002, which will then be documented accordingly.

Rapid Intervention Team

This training is also provided in-house; however, the program is primarily skills-related and does not include an assessment process involving written exams and/or practical skills evaluations, and as such, most likely does not meet all requirements of the NFPA 1407 standard.

Team Leader Role

The majority of the competencies in the Playbook for this role are derived from the NFPA 1021 FO-I requirements. As such, all Captains and Lieutenants meet these requirements as they are qualified at the FO-I level or higher. In addition, all firefighters

qualified as acting Lieutenants and Captains also meet these requirements as they too are qualified at the FO-I level. As such, the Department has sufficient members available to meet the requirements of the Team Leader role as required by the Playbook. It should also be noted that the Playbook indicates that a fully qualified firefighter in a Full-Service department is essentially deemed to meet the Team Leader requirements.[75] However, care should be taken when assigning such roles to firefighters, to ensure that they have the necessary training and qualifications for the supervision they reasonably are expected to provide. This training is also not provided to the volunteer members.

13.8 Specialty Firefighter Skills Training

In addition to the basic fire suppression/firefighter skills, the Department also provides its members with training to acquire a number of required and/or specialty operational competencies or skills:

Hazmat Response

All members are initially trained to the Operations level, which as noted above, is achieved through their NFPA 1001 Firefighter II certification. In addition, approximately 25 members are also trained to the Technician level. In the past, this has been achieved through a Pro Board accredited program, whereby all Company Officers, suppression Lieutenants and Captains, were trained to this level; however, this is no longer the approach with this training now provided to those that request to be a part of the hazmat team/specialty.

The Department also has 6-8 technician members trained to the CBRN level, as well as 8-10 technician members qualified as railcar specialists.

Technical Rescue Responses

Vehicle Rescue/Extrication

The CTO indicates that most members are trained and operate to the Operations level through an in-house program along with in-house evaluation processes to meet the passenger vehicle/operations level requirements of the NFPA 1006 standard.

The Department has recently purchased new auto-ex rescue tools and equipment to replace the previous equipment, and as such, recently put all members through a refresher program to ensure familiarity with the new tools, and to refresh and evaluate all skills. As such, the CTO believes most members are now at the desired level. This training was conducted on-duty, using the flex members on shift to free up a given crew to enable better on duty training.

[75] See: Provincial Training Standards, p. 5/20.

The Department is also looking to expand the Vehicle Rescue program to include the Technician/Heavy Rescue level in the future.

High/Low Angle Rope Rescue

Most members were initially trained and operate to the Operations level through a third-party accredited program, with about 5 members qualified at the Technician level. The Department has attempted to maintain this level of qualification through on-duty training, and has recently trained 6-8 members at the technician level through a non-accredited program; however, there are no formal assessments of this training, or the maintenance training over the years, and so no current records to qualify the members at these levels.

As with other specialty disciplines, the pandemic has made it difficult to maintain these skills. The in-house maintenance has no accredited certification, and uncertain if it meets the 1006 requirements. As such, the CTO is unable to indicate that all members meet the NFPA 1006 level requirements.

The training division is currently in the process of reviewing and redeveloping the in-house program to ensure it meets the 1006 requirements – creating a new program, to include the required assessment/evaluation processes. The recently trained tech level members will serve as the instructors and evaluators for this new program. The intention is for this program to also be provided on-duty.

Tower Crane Rescue

Same as for the above High/Low Angle Rope Rescue skills, with most all members at the Operations level as part of the high-angle rope rescue training, and approximately 5 members with the tower crane rescue component through the THARP program.

Confined Space Rescue:

Same as for the above High/Low Angle Rope Rescue skills, with all members at the Operations level and about 8 members at the Technician level through a third-party accredited program.

Given many similarities and cross-over skills with the rope rescue program, the Department has combined these skills into the rope rescue discipline; as such, the rope rescue members are now also confined space trained.

These skills are also maintained in-house, but given the lack of a formal evaluation processes, it is difficult to state that the members meet all of the NFPA 1006 requirements. As such, the Department would like to establish a similar process as is being developed for the rope rescue program.

Swift Water Rescue:

Most members are trained at the Operations level, with 6 members at the Technician level through Rescue Canada. This program comes with 3 years of certification, and then must be renewed. Rescue Canada provides documentation that indicates the level

achieved, such as tech level, as per the NFPA standard; however, only valid for 3 years and then members must be reassessed by Rescue Canada to be issued a new certificate.

These members then serve as the instructors for the operations members in-house training and maintenance. Rescue Canada recently did a reassessment of the current 6 tech members; as such, these members currently meet the 1006 requirements.

The Department now has a water rescue vessel/boat – still completing the required equipment and policies/OGs etc. to make functional, so not yet in service, but hope to be soon.

Ice Rescue:

Also provided by Rescue Canada for about fifteen members through the same format as the swift water rescue program above.

Wildland/Urban Interface:

Most all members have taken part in the basic wildland levels of S100 and S185 courses through the provincial wildfire programs. No members are currently training in the structural protection unit skills/competencies.

13.9 Company Officer Training

The Department has set NFPA 1021 FO-I as the minimum standard for their Company Officers, the shift Captains and Lieutenants, and for those members acting in the rank of Lieutenant or Captain.

Company Officer and firefighter training should also be supplemented by live fire training, as well as an appropriate level of emergency incident management training to ensure the Department has sufficient qualified individuals who can fill the role of incident commander.

These qualifications meet the requirements of the Provincial Training Standards. However, given the manner in which the NFPA 1021 standard is structured, we would recommend that the Captains meet or exceed the FO-II qualifications, and the Lieutenants meet the FO-I qualifications as is the current practice.

Currently there are several firefighters who also meet the requirements of FO-I, and as such are qualified to act in the role of Lieutenant. The fire officer development program consists primarily of external third-party Fire Officer courses for NFPA 1021, FO-I and II.

Another consideration in the development of Company Officers is the need to ensure that the Incident Safety Officer (the “ISO”) role can be fulfilled. This is an area where the Department is also doing well, where almost all Company Officers have completed the ISO qualification over the past several years.

13.10 Chief Officer Qualifications

The Fire Chief is qualified at the FO-II level or higher, along with a post-secondary degree or diploma in Fire Leadership or related discipline, as well as having extensive fire service experience at a progressively more responsible levels within a municipal fire service in senior supervisory positions.

The Deputy Chief Officers are both qualified at the FO-II level or higher, as well as having completed three or more 3-credit post-secondary courses, and significant experience at responsible levels within the Department.

The Operations Assistant Chiefs are also qualified at the FO-II level, as well as having completed five or more 3-credit post-secondary courses.

The Chief Training Officer is qualified at the FO-II and FSI-II level, as well as having completed five 3-credit post-secondary courses.

13.11 Fire Prevention Qualifications

The duties of the Fire Prevention Officers include fire and life safety inspections, fire investigations, plan review, fire and safety public education and training for company officer inspections.

When the new *Fire Safety Act* comes into effect, there will be accompanying regulations relating to the minimum training required for fire safety inspections and fire investigations. Based on our understanding of what those requirements are likely to be, some of the Fire Prevention Officer's qualifications may not be sufficient, and where the Department undertakes duty-crew inspections, it may be necessary to upgrade the training of members taking on such a role.

13.12 Maintenance Training

Historically, the training and development of new skills, and the maintenance of these competencies, has been a priority for the Department with much of the maintenance training having to be conducted off-duty. The CTO notes that with the pandemic restrictions of the past 24 months, this goal has been more difficult to achieve. In his view, some of the existing skill sets need to be better maintained and improved in some areas.

The 2015 Edition of the Provincial Training Standards expressly requires on-going skills maintenance, noting that:[76]

> "the maintenance training for such competencies is the responsibility of the AHJ and it is expected that this will be accomplished through ongoing skills maintenance training and education. This ongoing training must be duly recorded for each firefighter and officer."

[76] Provincial Training Standards, section 7, "Maintenance Training" at p. 7.

The area of training for the various technical rescue responses, and more specifically the requisite of on-going maintenance training, has proven difficult for the Department. Currently, while members are proficient in the specialty rescue areas such as high angle or swift water rescue when initially trained, their skills will lessen if not practiced on a regular basis. This is in part due to the problems faced by the training division having to scheduling members on their days off for re-occurring training (noted earlier). It is imperative that if the Department is mandated to provide a specific rescue service, that a corresponding training budget is approved to ensure that the required training can be provided.

One of the issues to consider in the overall approach to maintenance training by the Department, is to clarify that the Company Officers (Captains and Lieutenants) are primarily responsible for delivering such training. The training OG (OG #3.01), along with the job descriptions and qualification requirements for the shift Captains and Lieutenants, include a variety of training responsibilities and skillsets:

- NFPA 1021 Fire Officer I, II and/or III Certification; which includes the responsibility to direct unit members during a training evolution, to initiate actions to maximize member performance, and to evaluate the job performance of assigned members;
- NFPA 1041 Fire Service Instructor I Certification; to deliver instruction effectively, to modify lesson plans, develop an evaluation instrument, schedule training sessions, and supervise and coordinate training activities;
- Company Officers are expected to manage the training/certification requirements of all shift members, and liaise with the Training Division to ensure effective delivery;
- To facilitate both regular drills as scheduled, and impromptu drills as required, and supervise, coach, and evaluate their suppression staff.

As such, responsibility for on-going fundamental skills maintenance training properly falls to this position. Such an approach to operational maintenance training is common practice for career departments. During our interviews and meetings with the Chief Officers and the Training Captain, they agreed on the importance of quality skills maintenance training, and recognized that the Company Officers are a significant part of this responsibility. The Department and the CTO need to support the Company Officers in this role by:

- providing appropriate, standardized material covering the different skills to be taught or refreshed;
- establishing clear guidance on how such materials are to be used and how often different aspects of refresher training is required;
- setting out the processes which are to be used to assess and evaluate members who complete each element of such training; and
- ensuring that such training and the corresponding evaluations are properly recorded and documented.

From our review, it appears that this support was not always as available in as timely and consistent a manner as the Training Division would like, a problem exacerbated by the pandemic. However, with the pandemic restrictions now lifted, the CTO is putting out a more definitive monthly training schedule addressing a variety of skills which are to be the subject of training on a daily basis. As such, significant elements of firefighter maintenance training are now covered by the monthly training schedule.

As the CTO and Training Captains are very capable trainers, a concern exists that, when they visit the hall shifts, they will be expected to "take over" or to actually "perform" the maintenance training rather than it being directed and led by the Company Officers. The Training Division CTO and Training Captain are encouraged to engage and support both specialty service training and ongoing skills maintenance, but not to replace the Company Officers' role in the conduct of such training.

Given the current needs, it may be necessary to have more time scheduled for maintenance training, and to ensure the Captains are made more familiar with any support material that is available on the Department's computer network, and/or from the Training Division.

Another approach to the maintenance of the basic fire suppression skills might be to establish specific firefighters on each shift who are prepared by the CTO in the maintenance training competencies for each of the various areas of expertise, such that they can then be assigned/transferred from shift to shift and hall to hall delegated to assist the hall Captains with some of this responsibility in designated specific areas of firefighter competencies.

The Training Division continues to enhance maintenance training in most areas along with improved periodic assessment/evaluation processes. The CTO has also recently implemented a new approach on a couple of occasions by providing maintenance training on duty using the flex members on shift to free up a given crew, better enabling them to take part in this training without interruption. This approach is not always an option, additional staffing is a better solution to maintaining the skills and competencies associated with these specialty disciplines.

13.12.1 Firefighter/Fire Suppression Maintenance Training

The Department attempts to maintain members' skills through on-duty maintenance training. As noted above, the Department's staffing levels make this approach challenging. This section of the report necessarily overlaps somewhat with the section above addressing initial skills training.

The Training division has been providing a better-defined monthly/weekly training schedule over the past several years, addressing a variety of skills maintenance to be accomplished at the hall level on a daily basis in an effort to improve the overall maintenance of the member's skills and abilities. The Company Officers are responsible for determining how best to implement such training.

The Department's approach to maintenance training for fundamental fire suppression skills and qualifications is set out below, along with any challenges that were identified during the review.

All maintenance training needs to periodically include formal evaluation processes, the frequency of such evaluations determined by the CTO, with each member's results being maintained in an individualized record.

Basic Fire Suppression

More effort has been made by the Department over the past few years to ensure the consistent maintenance of the firefighter skills under the NFPA 1001 and related standards. This program includes improved lesson outlines and skills requirements, along with informal assessments, but does not include formal evaluations and the associated documentation required to enhance the individual training records. The Training Division is continuing to improve this program with additional training session materials and the implementation of enhanced skills evaluations and recording processes in the near future.

One of the challenges the Department faces in ensuring firefighter skills are maintained at the desired levels, is the limited training ground space at each of the fire halls, and the lack of a suitable training site and associated training facilities.

Given the need for certain training activities to be conducted in a secondary response mode, along with the insufficient number of on-duty personnel to do so, the Department is unable to achieve at all times the required maintenance training on-duty.

As such, the desire to have most all maintenance training take place on-duty is proving very difficult; given not all maintenance training can be conducted on duty, and the lack of a suitable training site and facilities, is resulting in a significant loss of available training time.

Emergency Medical Services:

All members undertake periodic in-house refresher/maintenance training and re-certification as required by the provincial Emergency Medical Assistants Licensing Board.

Live Fire

In the past, the Department has conducted live fire maintenance training at the Quesnel training ground facilities. Given the time required to drive to Quesnel and back (approximately 3 hours), a limited amount of actual training is accomplished on these days. Typically, these training exercises have been conducted by Prince George instructors, with the assistance of the Quesnel burn building technicians. As such, these training sessions were conducted with Prince George in-house programs and instructors, and most often not assessed or evaluated. Due to Covid restrictions, and other scheduling issues, the live fire maintenance training exercises have not taken place regularly for the past several years.

The CTO would like to re-establish these training sessions on a more routine basis, and to incorporate more of the evaluation component in future live fire sessions. To

accomplish this, the Department will need to develop a suitable training site and facilities within its own geographical area.

Given the potential risks associated with live fire training, the Department will also need to ensure that all instructors and evaluators are properly qualified to deliver such training.

Emergency Vehicle Driver/Operator

The maintenance training for EVO/EVD is conducted in-house but has lacked formal skills evaluation processes in the past; however, the new in-house maintenance program is being enhanced to include skills evaluation and recording processes to ensure members meet the requirements of the NFPA 1002 standard.

Incident Command Roles

The officers in the Department are trained at least to NFPA 1021 FO-I. However, based on our review, refresher training for Emergency Incident Management ("EIM") functions should be implemented for all Company Officers and Acting Officers to ensure the knowledge and skills of the Incident Command role are properly maintained on an annual basis.

Rapid Intervention Team Training

The maintenance of RIT skills has been addressed periodically with a variety of in-house training exercises; however, this process has only involved informal observations and assessment, and lacked formal evaluation processes. To ensure the member's skills and competencies meet the requirements of the NFPA 1407 standard, the Department should develop a more formal assessment and evaluation process to be used during these periodic maintenance training sessions.

13.12.2 Specialty Services Maintenance Training

The general feedback from our interviews regarding specialty skills maintenance training was that the competencies and skills in a number of these areas have not been as well maintained as they need to be, since the initial training was provided and qualifications achieved.

As noted above, the nature of the maintenance training for these specialty areas has to be based on the level of service being provided, to ensure these competencies and skills are maintained at the appropriate level.

Hazmat Response

The members are initially trained to the Operations level as part of their NFPA1001 certification, with some additional training to achieve Operations Mission Specific skills for some disciplines provided over the following years. Some 25 members are also trained to the Technician level (the highest qualification level), which is appropriate given the range of industrial and transportation hazards in the City. The NFPA 1072 standard, which governs, among other things, hazmat responses, requires personnel to remain

current with the general knowledge, skills and JPRs for each level or position of qualification under that standard.[77]

The Training Division attempts to include various components of the required hazmat skills in each monthly training schedule, though this is not always possible. Also, these processes did not include periodic formal assessment/evaluation of the required competencies and skills to ensure the members continue to meet the requirements of the NFPA 1072 standard.

In the past, to maintain these skills, the maintenance training took place several times throughout the year with much of this having to be conducted during off duty sessions; however, this approach waned as result of the pandemic restrictions, and the Department has not been able to re-implement the maintenance training in the same manner. As such, minimal maintenance training has been conducted in the past two to three years.

The Training division is attempting to correct this situation with plans to schedule more hazmat maintenance training through the in-house program and added assessment processes to ensure they meet the NFPA 1072 requirements. This maintenance training is better accomplished on-duty; however, some aspects will require a secondary response model.

Technical Rescue Responses:

Section 1.2.6 of NFPA 1006, the standard for technical rescue qualifications, requires that technical rescue personnel remain current with the general knowledge, skills, and JPRs addressed for each level or position of qualification. Technical rescue personnel are required to remain current with technical rescue practices and applicable standards and to demonstrate competency on an annual basis.

Vehicle Rescue/Extrication:

The vehicle rescue/auto-extrication in-house training program and evaluation processes are intended to meet the requirements of the NFPA 1006 standard, as such, most members were initially qualified at the Operations level for typical passenger vehicles.

Maintenance training was performed regularly in the past, however, recently hampered by the pandemic restrictions.

The Department recently purchased new auto-ex rescue tools and equipment and put all members through a refresher program to ensure familiar with these new tools, and to refresh and evaluate these skills. As such, all members currently meet the required competencies of the 1006 standard. This training was conducted on duty, using the flex members on shift to free up a given crew to enable better on-duty training.

[77] *NFPA 1072: Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications*, s. 2.1.6.

High/Low Angle Rope Rescue:

All members are trained and operate to the Operations level, with six to eight members trained to the higher Technician level.

The Department has attempted to maintain these skills through various training sessions conducted throughout the year; however, as with other specialty disciplines, the pandemic has made it difficult to maintain these skills.

The in-house program does not include formal assessments or records to evidence these qualifications, and therefore, it is difficult to determine if the majority of these members have maintained their skills at the operations level, and more particularly, that the six or eight members trained to the technician level have maintained their skills at the higher level.

The Department is now in the process of reviewing and redeveloping the in-house program to ensure it meets the 1006 requirements, and to include the required assessment/evaluation processes. It is also intended that this program be provided on-duty. The tech level members will be the instructors/evaluators for the new program and assist in maintaining the other members at the operations level.

Tower Crane Rescue

As for the High/Low Angle Rope Rescue skills noted above, most all members were qualified at the Operations level as part of the high-angle rope rescue training, and approximately 5 members qualified with the tower crane rescue component through the THARP program.

The in-house program does not include formal assessments or records to evidence these qualifications, and therefore, it is difficult to determine if the majority of these members have maintained their skills at the operations level, and more particularly, that the five members trained in the tower crane rescue component have maintained their skills at this level.

Confined Space Rescue:

As with the above noted technical rescue skills, all career members were initialled trained at the Operations level with about eight members trained to the Technician level. The Department then seeks to maintain these skills through various in-house training sessions incorporated with the rope rescue disciplines, and conducted throughout the year, but does not have formal assessment processes or records to evidence the members' qualifications.

Given the lack of formal assessments or records it is difficult to determine if the majority of these members have maintained their skills at the operations or technician level.

The Training division would like to develop a similar approach as is being developed and implemented for the rope rescue program.

Swift Water Rescue:

With the tech rescue trained members as the instructors, the in-house training and maintenance for all swift water team members is conducted once per year.

Ice Rescue:

The maintenance of these skills is also achieved through an in-house program similar to that of the swift water program.

Wildland/Urban Interface:

Most members have received the basic wildland S100 training sessions; however, there is no indication that these skills been maintained.

The Department recognizes that maintenance of specialty skills is a significant challenge, and that many of these skills may not been adequately maintained, or, at least formally assessed to be able to demonstrate that members' qualifications have been maintained to the required level. Although the members have achieved the necessary qualifications in several specialty rescue areas, such as vehicle rescue or confined space rescue, their skills and qualifications require regular refreshing. Part of the problem is the interrelated issues of time, cost and training space/facilities. In addition, continued support from the Department, in the form of curriculum and associated evaluation materials, is required to enable the Company Officers to provide properly evaluated and documented skills maintenance training in an on-duty format.

In relation to maintenance training for specialty skills, there appears to be enough specialty team instructors to maintain these programs, and more on-duty time is now being dedicated to achieving the required maintenance training. Part of this issue, as noted above, is that some of this training requires that members be moved from a primary to secondary response role (i.e., taken out of service), leading to a need to backfill positions, and increasing overtime costs (as well as impacting members' off-duty days) to meet these training requirements.

As noted above, training for the various technical rescue responses and more specifically the provision of required on-going maintenance training for these skills, is proving difficult for the Department, both in terms of the desired level of qualification, an available training site with appropriate facilities, and resources and budget. However, it is imperative that, if the Department is intending to provide a specific service at a specific level, a corresponding training budget and related resources be approved to ensure that the required initial and maintenance training can be provided.

Given the importance of ensuring that specialty team training is properly maintained, we would suggest the Training division budget be reviewed to determine if sufficient funds have been allocated to address the added costs of overtime for additional members to back-fill units, or to provide off-duty training, when these specific training exercises are required.

If there is insufficient funding to support the required initial and on-going maintenance training for various specialty services, it may not be possible to maintain such services at the existing proficiency levels. It may be that the cost of maintaining these services at higher levels of

qualification are considered too great: Such a determination, however, needs to be based on an assessment of the risks faced within the City, the City's mandate for service established for the Department, the Department's operational capabilities, and a comprehensive cost-benefit analysis.

We would recommend that the Department undertake an internal review of all specialty services currently provided to determine:

- whether the service needs to be provided by the Department given its operational environment, and if so, to what level;
- the required training necessary to provide that service at the determined level; and
- the actual funding needed to provide such specialty service including equipment, initial training, and on-going maintenance training and periodic requalification of members and officers.

Once responses to these questions have been determined, the Department should seek appropriate approval and funding from Council to better manage all required training functions and processes. Where it is not possible to ensure a proper training and qualification regime for any specialty service, that service should be discontinued, as it poses a significant risk to the responders and increases the risk of liability for the City should an incident response go badly.

The other significant issue for consideration, is the lack of a suitable local training site along with the required facilities and props to be able to provide and maintain the training for these various services.

13.12.3 Company Officer Maintenance Training

Maintenance training for the Company Officers (Captains and Lieutenants) has been conducted somewhat in the past, with an attempt to hold quarterly officer meetings to address day-to-day administrative and supervisory issues, along with occasional EIM scenario-based exercises.

The importance of EIM training and/or refresher seminars cannot be overstated. As such, one area where further attention should be placed is on the regular maintenance training of the EIM skills and knowledge to ensure the Company Officers are properly prepared for the potential range of emergency incidents that they may face.

The Department should review the EIM skills of each of its officers and, if necessary, implement regular "refresher" or maintenance training sessions as required.

Given there is currently no formal program or process for the maintenance and review of the various Company Officers' role and skills, this maintenance training requirement, along with that of others, are now being added to the monthly training schedule, which identifies the areas that are to be reviewed during that time frame.

13.13 Training Records

The critical nature of proper records keeping was made evident in the accident investigation report conducted by WorkSafe BC into the 2004 line of duty death in Clearwater. In that case, the department involved lacked the records needed to demonstrate that its members were properly trained, and the training properly maintained, for roles assigned to them.

Both the *Workers Compensation Act* and the Provincial Training Standards require that appropriate training records be maintained for firefighters and fire officers. The 2015 Edition of the Provincial Training Standards make clear that the training records need to be maintained on an individual basis, and that the AHJ is ultimately responsible for ensuring proper records are kept.[78] That requirement is fully consistent with the AHJ's obligations as the employer under the *Workers Compensation Act* and related OH&S regulations.

When setting up a training records system, whether a commercial database like FDM or Vector Solutions (formerly Target Solutions), or a hard copy filing system, it is important to understand the purpose of a training record. While it is important to record what training a member has received, it is equally important to be able to determine what training an individual has not had or has not had for a long time.

The importance of maintenance training, or reviewing what has been learned in the past, cannot be overstated. In addition, as training programs are revised and updated, it is important to ensure the Department is able to track who has, and who has not, had the updated program. As noted earlier, the subject matter of the training needs to be clearly described in the records. If the training relates to a particular JPR under the Provincial Training Standards, or an NFPA standard, that JPR should be identified along with the specific evaluation instrument, such as a skills checklist, that was utilized.

If the records are incomplete for any members, the issue can be addressed through a formal performance appraisal conducted by the Training Division, Company Officers, and/or shift instructors, with the results being duly recorded. Such assessments will identify any training gaps in a member's skills and competencies between when they are initially hired to when they are trained or confirmed as an officer, and direct the maintenance training required to ensure these members are able to demonstrate the appropriate competencies in a given time period.

The requalification frequency for all programs should be identified so as to provide a guide for the Company Officers and shift instructors who are responsible for maintaining these skills and competencies. The present goal for any changes is to ensure consistency and objectivity for all maintenance training and subsequent record keeping for all members.

The Department currently maintains its training records in its FDM records management system, and has done so since 2009. Prior to 2009 all training records were tracked either through hard copy files or using in-house designed spreadsheets. The CTO indicates that the Department's training records prior to 2009 were not well maintained and as such they would be

[78] 2015 Edition, Section 6, "Instruction, Evaluation and Records Keeping" at p. 6.

hard pressed to produce accurate individual records on some members' past training. The current training records are electronically tracked by individual firefighter, on a per fire hall, per shift basis; as such the retrieval of training data is considerably easier under the new system. Day to day training sessions are recorded by the hall Captains in the FDM RMS, these are then reviewed by the Operational Assistant Chief and by the Training Division.

The Training Division does not provide training for the fire prevention officers or dispatchers currently, and as such does not track the dispatchers' or fire prevention office training in the FDM system.

Currently there is not a record of what every person should have, as opposed to what they actually have. There is a regular training schedule, mostly skills maintenance, but this could be expanded to identify on a year-by-year basis the maintenance training needs for each individual.

Gradually over the past several years, more of this training documentation and maintenance requirements are being added into the system; however, not all the assessment/evaluation processes used. The current system does not identify how they were assessed for general firefighter skills. Most of the specialty disciplines have the evaluation processes built into the maintenance training, but these not formally identified in the records.

The RMS does have an evaluation "tab" to enable the recording of maintenance training assessments/evaluations; however, this is currently not being utilized.

The CTO and Training Captain are slowly creating additional training and performance evaluation documentation, such that these can also be entered into the records management system to improve its ability to report out on the statistics for individual training accomplishments and qualifications.

The improvement of the current records management system is a work in progress. When the planned updates are completed, it will identify all drill and maintenance training, and associated assessment processes, for all individuals who attended. In its present state, however, it is somewhat difficult to identify the specifics of a particular training event, exactly what skills were performed, and how, or if, they were evaluated, as a complete training record of an individual member.

13.14 Recommendations

#13-1: Consideration should be given to improving the training facilities. (currently fire hall setting) This should include a dedicated Department training site (possibly located in the industrial area) to simulate scenario-based common types of incidents and allow for live-fire exercises. The site should also include training rooms, required training facilities/equipment and outside props.

#13-2: The Department should develop a plan to achieve compliance with the September 2022 Provincial Training Standards by Q2 2024.

Appendix 1: Defined Terms and Acronyms

Term/Acronym	Definition
2015 Edition [Provincial Training Standards]	*British Columbia Fire Service Minimum Training Standards: Structure Firefighters – Competency and Training Playbook* (September 2014; second edition – May 2015).
2022 Edition [Provincial Training Standards]	*British Columbia Structure Firefighter Minimum Training Standards* (28 September 2022).
2013 FUS Report	Fire Underwriters Survey, *City of Prince George: Fire Protection Services Study – Final* (2013)
2016 SOC Report	Dave Mitchell & Associates Ltd, *Prince George Fire Rescue Standards of Cover*, June 2016
AHJ	Authority Having Jurisdiction
BCEHS	British Columbia Emergency Health Services
BCEMS	British Columbia Emergency Management System
Bylaw No. 7920	*Emergency Program Bylaw No. 7920, 2006*
Bylaw No. 8272	*City of Prince George Fire Protection and Emergency Response Bylaw No. 8272, 2013*
CAD	Computer Aided Dispatch
CFPO	Chief Fire Prevention Officer
City	City of Prince George
Consultants	Dave Mitchell & Associates Ltd.
CRA	Community Risk Assessment
CRM	Clinical Response Model
CTO	Chief Training Officer
Department	Prince George Fire Rescue Service
DMA	Dave Mitchell & Associates Ltd.
DPG	Dwelling Protection Grade
EIM	Emergency Incident Management
EMBC	Emergency Management BC
EMR	Emergency Medical Responder
EMS	Emergency Medical Services

Term/Acronym	Definition
EOC	Emergency Operations Centre
EPA	Emergency Program Act
EPC	Emergency Program Coordinator
ESS	Emergency Social Services
EVD/EVO	Emergency Vehicle Driver/Operators
FMR	First Medical Responder
FF-I and FF-II	Firefighter I, Firefighter II
FOCC	Fire Operations Communications Centre
FO-I and FO-II	Fire Officer I, Fire Officer II
FPB	Fire Prevention Branch
FSI	Fire Service Instructor
FTE	Full-Time Equivalent
Hazmat	Hazardous Materials
HRVA	Hazard, Risk and Vulnerability Assessment
ISO	Incident Safety Officer
JIBC	Justice Institute of BC
JPR	Job Performance Requirement
LAFC	Local Assistant to the Fire Commissioner
MEP	Manager, Emergency Programs
NFPA	National Fire Protection Association
OCP	Official Community Plan
OFC	Office of the Fire Commissioner
OG	Operational Guideline
OH&S	Occupational Health and Safety
OH&S Regulations	*Occupational Health and Safety Regulation*, B.C. Reg. 296/97
PFPC	Public Fire Protection Classification
PGFRS	Prince George Fire & Rescue Service
PGIMAC	Prince George Industrial Mutual Aid Committee
Policy Committee	Emergency Policy Committee

Term/Acronym	Definition
PPE	Personal Protective Equipment
Protection Report	Registered Professional Protection of Adjacent Buildings Report
RAP	Resource Allocation Protocol
RIT	Rapid Intervention Team
Safety Plan	Construction Fire Safety Plan
SCBA	Self-Contained Breathing Apparatus
WCA	*Workers Compensation Act* (B.C.)
VFRS	Vancouver Fire/Rescue

Appendix 2: NFPA Deployment Model

NFPA 1710: *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*

This edition of NFPA 1710 was approved as an American National Standard on May 18, 2019.

The following is excerpted from NFPA 1710 with the running totals added for reference.

5.2.4.1 **Single-Family Dwelling Initial Full Alarm Assignment Capability**.

5.2.4.1.1*The initial full alarm assignment to a structure fire in a typical 2,000 ft^2 (186 m^2), two-story single-family dwelling without basement and with no exposures shall provide for the following:

(1) Establishment of incident command outside of the hazard area for the overall coordination and direction of the initial full alarm assignment with a minimum of one member dedicated to this task (1)

Running total: 1

(2) Establishment of an uninterrupted water supply of a minimum of 400 gpm (1,520 L/min) for 30 minutes with supply line(s) maintained by an operator (1)

Running total: 2

(3) Establishment of an effective water flow application rate of 300 gpm (1,140 L/min) from two handlines, each of which has a minimum flow rate of 100 gpm (380 L/min) with each handline operated by a minimum of two members to effectively and safely maintain the line (4)

Running total: 6

(4) Provision of one support member for each attack and backup line deployed to provide hydrant hookup and to assist in laying of hose lines, utility control, and forcible entry (2)

Running total: 8

(5) Provision of at least one victim search and rescue team with each such team consisting of a minimum of two members (2)

Running total: 10

(6) Provision of at least one team, consisting of a minimum of two members, to raise ground ladders and perform ventilation (2)

Running total: 12

(7) If an aerial device is used in operations, one member to function as an aerial operator to maintain primary control of the aerial device at all times (1)

Running total: 13

(8) At a minimum, an initial rapid intervention crew (IRIC) assembled from the initial attack crew and, as the initial alarm response arrives, a full and sustained rapid intervention crew (RIC) established (4)

Running total: 17

(9) Total effective response force with a minimum of 16 (17 if an aerial device is used)

5.2.4.2 **Open-Air Strip Shopping Center Initial Full Alarm Assignment Capability**.

5.2.4.2.1*The initial full alarm assignment to a structure fire in a typical open-air strip shopping center ranging from 13,000 ft^2 to 196,000 ft^2 (1,203 m^2 to 18,209 m^2) in size shall provide for the following:

(1) Establishment of incident command outside the hazard area for the overall coordination, direction, and safety of the initial full alarm assignment with a minimum of two members dedicated to managing this task (2)

Running Total: 2

(2) Establishment of two uninterrupted water supplies at a minimum of 500 gpm (1,892 L/min), with each supply line maintained by an operator (2)

Running Total: 4

(3) Establishment of an effective water flow application rate of 500 gpm (,1892 L/min) from three handlines, each of which has a minimum flow rate of 150 gpm (568 L/ min), with each handline operated by a minimum of two members to effectively and safely maintain each hand- line (6)

Running Total: 10

(4) Provision of one support member for each attack, backup, and exposure line deployed to provide hydrant hookup and to assist in laying of hose lines, utility control, and forcible entry (3)

Running Total: 13

(5) Provision of at least two victim search-and-rescue teams, each team consisting of a minimum of two members (4)

Running Total: 17

(6) Provision of at least two teams, each team consisting of a minimum of two members, to raise ground ladders and perform ventilation (4)

Running Total: 21

(7) If an aerial device(s) is used in operations, one member to function as an aerial operator and maintain primary control of the aerial device at all times (1)

Running Total: 22

(8) At a minimum, an initial rapid intervention crew (IRIC) assembled from the initial attack crew and, as the initial alarm response arrives, a full and sustained rapid intervention crew (RIC) established (4)

Running Total: 26

(9) The establishment of an initial medical care component consisting of at least two members capable of providing immediate on-scene emergency medical support and transport that provides rapid access to civilians or members potentially needing medical treatment (2)

Running Total: 28

(10) Total effective response force a minimum of 27 (28 if an aerial device is used)

5.2.4.3 **Apartment Initial Full Alarm Assignment Capability.**

5.2.4.3.1 The initial full alarm assignment to a structure fire in a typical 1,200 ft^2 (111 m^2) apartment within a three-story, garden-style apartment building shall provide for the following:

(1) Establishment of incident command outside the hazard area for the overall coordination, direction, and safety of the initial full alarm assignment with a minimum of two members dedicated to managing this task (2)

Running Total: 2

(2) Establishment of two uninterrupted water supplies at a minimum of 400 gpm (1,520 L/min), with each supply line maintained by an operator (2)

Running Total: 4

(3) Establishment of an effective water flow application rate of 300 gpm (1,140 L/min) from three handlines, each of which has a minimum flow rate of 100 gpm (380 L/ min), with each handline operated by a minimum of two members to effectively and safely maintain each hand- line (6)

Running Total: 10

(4) Provision of one support member for each attack, backup, and exposure line deployed to provide hydrant hookup and to assist in laying of hose lines, utility control, and forcible entry (3)

Running Total: 13

(5) Provision of at least two victim search-and-rescue teams, each team consisting of a minimum of two members (4)

Running Total: 17

(6) Provision of at least two teams, each team consisting of a minimum of two members, to raise ground ladders and perform ventilation (4)

Running Total: 21

(7) If an aerial device is used in operations, one member to function as an aerial operator and maintain primary control of the aerial device at all times (1)

Running Total: 22

(8) At a minimum, an initial rapid intervention crew (IRIC) assembled from the initial attack crew and, as the initial alarm response arrives, a full and sustained rapid intervention crew (RIC) established (4).

Running Total: 26

(9) The establishment of an initial medical care component consisting of at least two members capable of providing immediate on-scene emergency medical support, and transport that provides rapid access to civilians or members potentially needing medical treatment (2)

Running Total: 28

(10) Total effective response force a minimum of 27 (28 if an aerial device is used)

5.2.4.4 *__High-Rise Initial Full Alarm Assignment Capability__.

5.2.4.4.1 Initial full alarm assignment to a fire in a building with the highest floor greater than 75 ft (23 m) above the lowest level of fire department vehicle access shall provide for the following:

(1) Establishment of a stationary incident command post outside the hazard area for overall coordination and direction of the initial full alarm assignment with a minimum of one officer with an aide dedicated to these task- sand all operations are to be conducted in compliance with the incident command system. (2)

Running Total: 2

(2) Establishment of an uninterrupted water supply to the building standpipe/sprinkler connection sufficient to support fire attack operations maintained by an operator and if the building is equipped with a fire pump, one additional member with a radio to be sent to the fire pump location to monitor and maintain operation. (1/1)

Running Total: 3

(3) Establishment of an effective water flow application rate on the fire floor at a minimum of 500 gpm (1,892 L/m) from two handlines, each operated by a minimum of two members to safely and effectively handle the line. (4)

Running Total: 7

(4) Establishment of an effective water flow application rate on the floor above the fire floor at a minimum of 250 gpm (946 L/m) from at least one handline, with each deployed handline operated by a minimum of two members to safely and effectively handle the line. (2)

Running Total: 9

(5) At a minimum, an initial rapid intervention crew (IRIC) assembled from the initial attack crew and, as the initial alarm response arrives, a full and sustained rapid intervention crew (RIC) established. (4)

Running Total: 13

(6) Provision of two or more search-and-rescue teams consisting of a minimum of two members each. (4)

Running Total: 17

(7) Provision of one officer, with an aide, dedicated to establishing an oversight at or near the entry point on the fire floor(s). (2)

Running Total: 19

(8) Provision of one officer, with an aide, dedicated to establishing an oversight at or near the point of entry on the floor above the fire. (2)

Running Total: 21

(9) Provision of two or more evacuation management teams to assist and direct building occupants with evacuation or sheltering actions, with each team consisting of a minimum of two members. (4)

Running Total: 25

(10) Provision of one or more members to account for and manage elevator operations. (1)

Running Total: 26

(11) Provision of a minimum of one trained incident safety officer. (1)

Running Total: 27

(12) Provision of a minimum of one officer two floors below the fire floor to manage the interior staging area. (1)

Running Total: 28

(13) Provision of a minimum of two members to manage member rehabilitation and at least one of the members to be trained to the ALS level. (2)

Running Total: 30

(14) Provision of an officer and a minimum of three members to conduct vertical ventilation operations. (4)

Running Total: 34

(15) Provision of a minimum of one officer to manage the building lobby operations. (1)

Running Total: 35

(16) Provision of a minimum of two members to transport equipment to a location below the fire floor. (2)

Running Total: 37

(17) Provision of one officer to manage external base operations. (1)

Running Total: 38

(18) The establishment of an initial medical care component consisting of a minimum of two crews with a minimum of two members each with one member trained to the ALS level capable of providing immediate on-scene emergency medical support, and transport that provides rapid access to civilians or members potentially needing medical treatment. (4)

Running Total: 42

(19) Total effective response force a minimum of 42 (43 if the building is equipped with a fire pump).

Appendix 3: Other Fire Training Sites

The four training sites in Metro Vancouver were identified for a detailed onsite visit and included Vancouver, Delta, Port Coquitlam and the Justice Institute of British Columbia (the "JIBC") at Maple Ridge. The site visits were hosted by the three fire departments as well as the JIBC in the first week of June 2022. Fire Chief Cliff Warner and Deputy Chief of Operations Bryan Burleigh were accompanied by the Consultants, Dave Mitchell, Wayne Humphry and Jim Cook.

Vancouver Fire/Chess Street

The training site for Vancouver Fire/Rescue ("VFRS") is at 1300 Chess Street with the closest fire hall approximately four blocks away. The training site includes classrooms as well as an engineered burn building and other props as well as space to train auto extrication. The site is approximately 11,600 square metres in size and is located in an area that is zoned as industrial and is adjacent to rail lines.[79]

Figure 32: Vancouver Fire Training Site at Chess Street, approximately 11,600 square metres.

VFRS staff commented that the site worked well but the total scope of the training requirements may not have been fully described at the time it was built. Their comments included how the site lacks appropriate storage space which is compensated for by using a large number of containers.

[79] The size of each training site was estimated using Google Earth Pro.

Delta Hall 4

The training site for the Delta Fire Department is located on Churchill Street on the east side of the Delta Airport. The site is zoned as industrial and contains an active fire hall with the primary response with a fully staffed engine.

The site is modern and contains a burn facility and other props as well as an area for training auto extrication. The fire hall is built to post-disaster standards and also contains the training department. This was noted by their staff as a distinct advantage. The premises also contain the City of Delta's primary Emergency Operations Centre and the municipal servers.

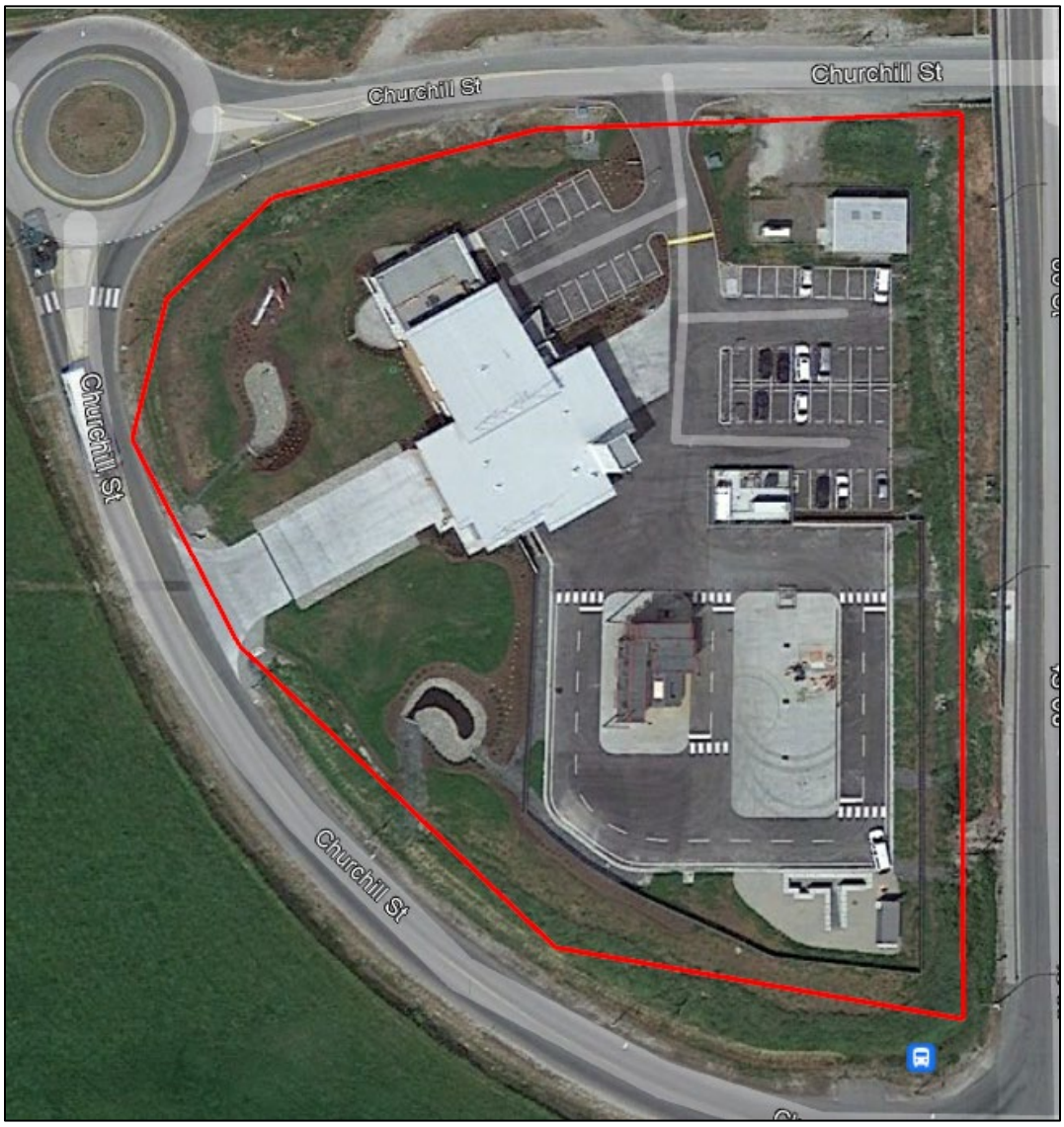

Figure 33: Delta Fire Training Site at Hall 4, approximately 13,000 square metres.

Port Coquitlam Hall 1

The training site for Port Coquitlam Fire & Emergency Services is located at Hall 1 at 1725 Broadway. Like Delta the training facility is part of an active staffed hall which also contains the staff of the training department. As with the previous two, the training facility includes a live burn building, various training props including an engineered tower and a space for auto extrication.

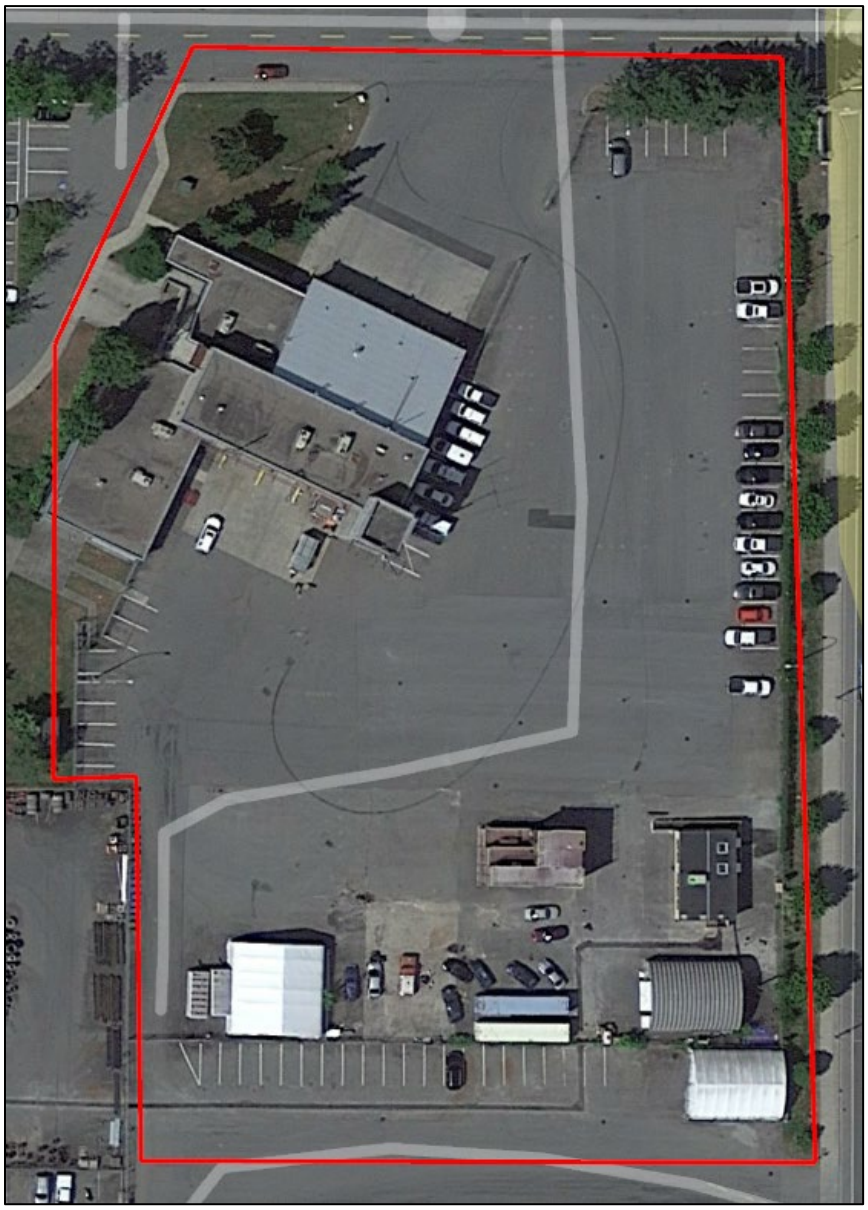

Figure 34: Port Coquitlam Fire Training Site at Hall 1, approximately 13,500 square metres.

JIBC Fire Academy - Maple Ridge

The JIBC Fire Academy training site is located in Maple Ridge at 13500 256 Street. This is a large site, shown in Figure 35, that contains an engineered live fire training structure as well as a number of training props and space for auto extrication.

Figure 35: JIBC Fire Academy Fire Training Site, approximately 43,000 square metres.

At the south end of the property there is a space dedicated to training for rail incidents, shown in Figure 36 below. This area was examined in detail and discussed as an option for the Prince George training site. Options 1 and 2 identified above are immediately adjacent to the CN

railroad and given the degree to which Prince George is bifurcated by heavily used rail lines one suggestion would be to include space for rail incident training by the Department.

Figure 36: JIBC Fire Academy Fire Training Site – Rail Incident Props in Detail.

The JIBC site was discussed with their management who noted this training facility is well used but being some distance from rail service it is difficult to have the most current rail cars available for training. This is important as rail cars are regularly upgraded with different valve assemblies and other features. A clear option for the Department would be locate their training site adjacent to a rail spur line so that tank car training would be done with the most current designs.

The possibility of developing a partnership with the JIBC were generally discussed and should be explored as a modern training site in Prince George could be used to train a larger number of departments. Such a partnership could include additional capital and operational funding. If this occurred the site would need appropriate classroom and office space to support all potential users.

A second partnership option could include First Nations and a preliminary discussion with FNESS was held in June. Such a partnership could provide a modern site tailored also to training firefighters from First Nations throughout the province. The immediate presence of the Prince George airport and abundant accommodations in the City could make this an important public safety training site for Central and Northern BC.

Appendix 4: NFPA Standards

The following is a list of the referenced NFPA Standards, the date of the current edition, and a brief description of the standard. [80]

NFPA 472: *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*, 2018

This standard shall identify the minimum levels of competence required by responders to emergencies involving hazardous materials/weapons of mass destruction (WMD).

NFPA 1001: *Standard for Fire Fighter Professional Qualifications*, 2019

This standard identifies the minimum job performance requirements (JPRs) for career and volunteer fire fighters whose duties are primarily structural in nature.

NFPA 1002: *Standard for Fire Apparatus Driver/Operator Professional Qualifications*, 2017

This standard identifies the minimum job performance requirements (JPRs) for career and volunteer fire fighters and fire brigade personnel who drive and operate fire apparatus.

NFPA 1006: *Standard for Technical Rescue Personnel Professional Qualifications*, 2021

This standard identifies the minimum job performance requirements (JPRs) for fire service and other emergency response personnel who perform technical rescue operations.

NFPA 1021: *Standard for Fire Officer Professional Qualifications*, 2020

This standard identifies the minimum job performance requirements (JPRs) for fire officer.

NFPA 1031: *Standard for Professional Qualifications for Fire Inspector and Plan Examiner*, 2014

This standard identifies the minimum job performance requirements (JPRs) for fire inspectors and plan examiners.

NFPA 1033: *Standard for Professional Qualifications for Fire Investigator*, 2014

This standard facilitates safe, accurate investigations by specifying the job performance requirements (JPRs) necessary to perform as a fire investigator in both the private and public sectors.

[80] Source: https://www.nfpa.org/

NFPA 1035: *Standard on Fire and Life Safety Educator, Public Information Officer, Youth Firesetter Intervention Specialist and Youth Firesetter Program Manager Professional Qualifications*, 2015

This standard identifies the minimum job performance requirements (JPRs) for public fire and life safety educators, public information officers, youth firesetter intervention specialists, and youth firesetter program managers.

NFPA 1041: *Standard for Fire and Emergency Services Instructor Professional Qualifications*, 2019

This standard identifies the minimum job performance requirements (JPRs) for fire service instructors.

NFPA 1072: *Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications*, 2017

This Standard identifies the minimum job performance requirements (JPRs) for Hazardous Materials/Weapons of Mass Destruction emergency response personnel.

NFPA 1407: *Standard for Training Fire Service Rapid Intervention Crews*, 2020

This standard specifies the basic training procedures for fire service personnel to conduct fire fighter rapid intervention operations so as to promote fire fighter safety and survival.

NFPA 1500: *Standard on Fire Department Occupational Safety, Health, and Wellness Program*, 2021

This standard specifies the minimum requirements for an occupational safety and health program for fire departments or organizations that provide rescue, fire suppression, emergency medical services, hazardous materials mitigation, special operations, and other emergency services.

NFPA 1521: *Standard for Fire Department Safety Officer Professional Qualifications*, 2020

This standard identifies the minimum job performance requirements (JPRs) necessary to perform the duties as a fire department health and safety officer and a fire department incident safety officer.

NFPA 1710: *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*, 2020

This standard specifies requirements for effective and efficient organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by career fire departments to protect citizens and the occupational safety and health of fire department employees.

NFPA 1901: *Standard for Automotive Fire Apparatus*, 2016

This standard defines the requirements for new automotive fire apparatus and trailers designed to be used under emergency conditions to transport personnel and equipment and to support the suppression of fires and mitigation of other hazardous situations.

Appendix 5: Consultant Backgrounds

Dave Mitchell

Dave Mitchell retired as Division Chief, Communications in 1998 from Vancouver Fire & Rescue Services following a career spanning 32 years. During this time, he was responsible for managing the emergency call taking and dispatch for the Vancouver and Whistler Fire Departments. In 1998, Dave was hired by E-Comm, Emergency Communications BC as its first Director of Operations. In this role he was a member of the founding senior management team and was responsible for the transition of the Regional 9-1-1 Control Centre staff from the Vancouver Police Department to its current location at 3301 East Pender in June 1999.

He left E-Comm in June 2000 to work as a consultant, and since that time has managed the development of corporate, strategic and operational plans for a number of clients. As principal of DMA, Dave participates on all projects undertaken by the company either as the lead consultant or by providing his expertise at an advisory or support level.

Dave holds a Bachelor of Arts Degree (Geography) from Simon Fraser University in addition to a diploma from their Executive Management Development Program. He is past Chair of the Board of Directors of the Vancouver General Hospital and University of British Columbia Hospital Foundation, past Chair of the Justice Institute of British Columbia Foundation, and a member of the Fire Chiefs' Association of British Columbia, and the Canadian Association of Management Consultants.

Jim Cook

Jim Cook is an experienced professional with over 38 years of experience in the fire service. He has extensive knowledge and experience with budgets, labour relations, fire operations, strategic planning, executive leadership, project management, community engagement, and organizational change. Jim began his career in the New Westminster Fire Department. He was promoted to the position of Deputy Chief in 2001. In 2008, Jim was appointed to the position of Fire Chief in West Vancouver where he worked to improve the mutual and automatic aid agreements in the region including with Lions Bay. His work there also included transitioning the department to the E-Comm Wide Area Radio System. During his career, Jim has worked on several committees and boards including the BC Municipal Pension Plan, BC Investment Management Corporation, Vancouver Hospital Foundation, BC Fire & Life Safety Education Program, First Responder Program and the BC Fire Chiefs Association. He is also a past-President of the Greater Vancouver Fire Chiefs Association.

Wayne Humphry

Wayne has over 40 years' experience with the BC fire service. He retired in 2009 from Vancouver Fire/Rescue after a career spanning 31 years. During this time, Wayne served in fire suppression, rising to the rank of Battalion Chief. He also worked extensively with Vancouver Fire's training division as an instructor and Division Chief between 1996 and 2009.

Based on his work in both roles he has extensive experience in fire rescue emergency operations, specialty teams, logistical planning and budgeting, training and development, facilitation, and project creation and management. In addition to his work with Vancouver Fire he has been an instructor at the Justice Institute of BC, at UBC's Sauder School of Business as well as for Capilano University.

Wayne has developed and delivered in-house Firefighter and Fire Officer Development seminars, including ProBoard certified programs, for various career and volunteer/paid-on-call fire departments throughout BC, Alberta, Manitoba, and the Northwest Territories. His training expertise includes Firefighter I & II, Fire Officer Level 1, 2 and 3 programs – Emergency Incident Management (BCEMS/ICS, Command Post and EOC operations, fire behavior, strategies and tactics); Incident Safety Officer; Rapid Intervention Teams; Fire Service Instructor; and Live Fire Exercises Levels 1, 2 & 3. Wayne was also a Fire and Rescue Services Subject Matter Expert for the JI's Critical Incident Simulation Centre's program development for multi-agency, multi-jurisdictional incident management training.

Ian MacDonald

Ian MacDonald is a retired corporate securities lawyer who practiced international corporate law in Canada and the United Kingdom. Ian was a partner with a major Toronto firm in the 1990s, and moved to England in 1997, where he became the managing partner of a specialist litigation and intellectual property practice. He retired from active practice in 2004.

Ian has worked with Dave Mitchell & Associates since 2007 and has participated in almost all the major fire and emergency service projects since that time. He assists with the analysis of the legal and governance structures affecting fire and emergency services, ranging from establishment and operational bylaws to WorkSafe issues.

Peter Wunder

Peter Wunder is a B.C. registered Professional Engineer with over 35 years' experience in the design, development, implementation, commissioning, operation and maintenance of complex mechanical, electrical, and control systems. He has extensive experience in alternate energy solutions in the automotive and transportation industry including integration of hydrogen fuel cells and diesel to natural gas conversions. He has managed many challenging programs and has worked closely with regulatory bodies to ensure the successful certification and commercial introduction of products using these new technologies. Additionally, he is an experienced marine systems engineer and served on ships in the Royal Canadian Navy as Head of the Marine Systems Engineering Department, responsible for the safe operation and maintenance of all marine systems on board. In this capacity he was also Head of the shipboard Damage Control and Firefighting organization with experience in the operation and maintenance of fire suppression equipment and systems including Dry Chemical (Purple-K), Aqueous Film Forming Foam, CO2 Flood, High Velocity Nozzles and Low Velocity Fog Applicators, and Galley Fire Suppression Systems (Range Guard). He also has direct experience in training fighting personnel onboard ship in many emergency scenarios including helicopter crashes.