

FIRE DEPARTMENT MASTER PLAN

September 28, 2021



Presented to:

District of Peachland

Submitted by:

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PREFACE

This document serves as the District of Peachland's Fire Department Master Plan. The primary motivation for developing this document is to assist the District of Peachland in establishing a long-term strategy based on community risk, safety, corporate priorities, and council approved budget allocations. This document will be used as a tool to evaluate and forecast immediate and future emergency service needs of the community.

ACKNOWLEDGEMENTS

Behr would like to specifically acknowledge the leadership, diligence and continuous improvement focus of Fire Chief, Dennis Craig. While there are several challenges for the District of Peachland Fire Department, Chief Craig remains positive in his efforts to enhance the department and public safety for the community and its citizens. The District of Peachland Fire Department firefighters are dedicated and engaged in the contributing to the protection of their community. Their pride in the department is clear.

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ACRONYMS

AHJ	Authority Having Jurisdiction	PFRS	Peachland Fire and Rescue Service
BCBC	British Columbia Building Code	POC	Paid-On-Call/Volunteer Firefighter
ERF	Effective Response Force	SOC	Standards of Cover
FDMP	Fire Department Master Plan	SOG	Standard Operating Guidelines
KSA	Knowledge, Skills and Abilities	SOP	Standard Operating Procedures
MVC	Motor Vehicle Collision	WEP	Work Experience Program
NFPA	National Fire Protection Association		



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EXECUTIVE SUMMARY

Introduction

Today's fire and emergency services are continually being challenged by budget constraints, rising call volumes, and increasing and unusual risks against a backdrop of expectations to do more with less. The demand for emergency response and management services has expanded, causing the role to shift and for services to diversify. Failing to address these challenges leaves both the community and its responders vulnerable.

Effective management of an emergency services department requires a clear understanding of risk and the ability to administer an appropriate response to manage the risks. The primary focus of this project was to review the current state of the Peachland Fire Rescue Services (PFRS) and provide recommendations in the form of a Fire Department Master Plan (FDMP) that will assist the District of Peachland in developing long-term strategies for its emergency services. This document aligns with the direction of the community in a planned incremental approach. It supports long-term growth while building on Council's strategic goals such as good governance and safe community.

This document should be considered an essential priority. It should be evaluated on an annual basis and updated as required to reflect any changing risks and circumstance of the community. The recommendations and options contained in this document should be considered critical requirements for public, firefighter, and community safety.

Project Overview

The scope and goals of this project evolved from an initial assessment of a proposed project site for a new fire hall to a complete Fire Department Master Plan (FDMP). Specifically the goals of this project were to:

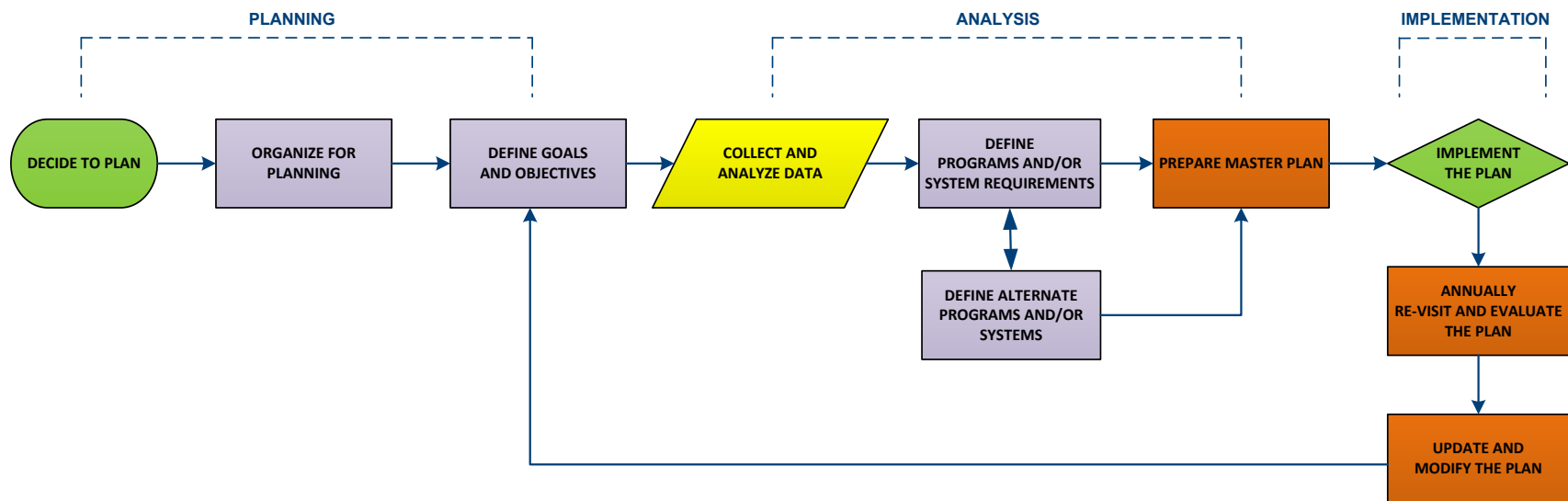
- Evaluate the existing means of fire and emergency services delivery and develop a comprehensive and fiscally responsible Fire Department Master Plan (FDMP). This FDMP will provide a systematic and comprehensive approach to evaluate current fire and rescue capabilities and assist in formulating and communicating strategic directions, while highlighting opportunities for improved service delivery.
- Review the fire hall replacement needs analysis and plan. The assessment considered the effective use of the project site and the ability to meet the needs of the District considering a 50-year time span.

Our study also investigated the needs of the community and will provide a point of reference upon which future decisions and priorities can be evaluated and implemented by identifying priorities, risks, challenges, and opportunities for the improvement of the delivery of emergency services. The outcomes are based on in-depth, evidence-based analysis of operations and services provided to the community using applicable legislation, and 'industry-leading' practices and standards.

Emergency Services Master Planning Process

The following diagram illustrates the process used to complete and our recommendation to maintain this Plan.

Figure 1: Master Planning Process



Consultative Process

As part of this report, interviews were conducted with the senior leadership team consisting of the Chief Administration Officer, directors of community services, planning, operations, the fire chief and two PFRS captains. In addition to this, a survey was sent to all other members of the PFRS, with a 91% response rate.

Targeted Interviews

Targeted interviews were part of the data and information collection process. Participants were asked questions related to their areas of purview and expertise. The interview was used to promote an open discussion about the community, risks and general concerns related to the PFRS operations including strengths, weaknesses, opportunities, challenges, and anticipated changes.

Table 1: Targeted Interview List

No.	Name	Job Title
1	Cheryl Wiebe	Director of Community Services
2	Darin Schaal	Director of Planning
3	Shawn Grundy	Director of Operations
4	Joe Mitchell	Chief Administrative Officer
5	Dennis Craig	Fire Chief
6	Eric Tupholme	POC Captain
7	Alister Bishuty	POC Captain

Online Firefighter Survey

To obtain balanced input, we employed an online firefighter survey. Our survey methodology offers several unique benefits. First, it offers an opportunity to gather opinions from an entire group as opposed to a limited sample of opinions from a select few. The online survey also offers an extremely flexible approach to the collection of data as respondents can complete the survey questions when it is convenient for them. Additionally, the anonymity of participants is relatively easy to control and therefore may yield more candid and valid responses.

Community Comparative Analysis

We conducted an industry peer comparative analysis for PFRS. This has been proven as a method of benchmarking the performance of departments to similar communities. These benchmarks include budgets, performance, effectiveness, and efficiencies. Although fire and emergency services ultimately have the same goal of protecting life and property, each community has its own unique features in how to accomplish their goals. Our main criteria for the comparative analysis are effectiveness and efficiencies between the communities, based on risk and mitigation.

Community Overview

Peachland is a municipal district within the Central Okanagan Regional District located on the west side of Okanagan Lake, 25 km south of the City of Kelowna and 40 km north of the City of Penticton. The District has an area of 15.98 km² and a population of 5,428 (Statistics Canada, 2016 Census) and an estimated population of 5,696 in 2019.

Peachland's economy is primarily based on tourism, marine and associated services which continues to play an important role in the economy of this District. Peachland does not have an industrial base and depends on residential and limited commercial taxation.

Community Risk Overview

Every municipality has unique challenges and characteristics contributing to the overall risk profile of the community. Some general examples of challenges that may impact community risks include:

- Fire/rescue service model and response capacity
- Population and demographics
- Population growth rate
- Industry types
- Economy
- Rate of development
- Transportation corridor types
- Topography
- Weather
- Historical response data

The evaluation of fire or rescue risks considers both the probability and consequence of emergency event types. The probability of an event is quantified by analyzing historical, current and projected data. The consequence of the event type or risk is based on an informed assessment of the potential impact on a community should the event occur.

Department Overview

The Peachland Volunteer Fire Brigade was established in 1909 when the community was incorporated. Since then, it has evolved into the Peachland Fire and Rescue Service (PFRS), providing the multitude of emergency services required of a modern thriving community. Besides providing fire and rescue services to residents and visitors, PFRS provides, as part of the Regional District of Okanagan regional rescue program, auto extrication to the Coquihalla Connector and Highway 97 outside the Peachland municipal boundary, as well as marine rescue on Lake Okanagan and low embankment rescue at operations level.

The Regional District of Central Okanagan has a very robust Regional Rescue Program that includes hazardous materials, technical high angle rescue, auto extrication and marine rescue.



The PFRS is one of eight partners in the Regional District of Central Okanagan's tried-and-true mutual aid agreement that has been activated a number of times for wildfire events over its long history. Regional emergency management with the Emergency Operations Center and Fire Dispatch are centralized at the Kelowna Fire Department.

PFRS currently consists of the following staff to deliver emergency services:

- One fire chief (full-time)
- One assistant chief (POC)
- Four captains (POC)
- Five lieutenants (POC)
- 22 firefighters (POC)
- One junior firefighter (POC)
- One administration assistant (full-time)

Note: *PFRS staffing levels of paid-on-call firefighters vary given the recruitment and retention challenges with volunteer/POC firefighters.*

PFRS has several fire service and mutual aid agreements with surrounding municipalities:

- Regional District of Central Okanagan Mutual Aid Agreement
- Regional District of Central Okanagan Emergency Program
- Regional District of Central Okanagan Regional Rescue Program Agreement
- West Kelowna Ladder Truck Agreement (also includes a fee for service on command staff assistance, fire investigation assistance)
- Regional District of Central Okanagan agreement to provide fire and medical response to the Brent Road area
- Mutual aid into West Kelowna and automatic aid for one property on MacKinnon Rd in the Trepanier area

Summary of Observations and Recommendations

The following recommendations are drawn from findings presented throughout the report. A timeframe within 0-60 months has been assigned to each recommendation, recognizing that the start and completion of any recommendation is based on annual corporate priorities and Council approved budget allocations.

Observation #1: Although there was a slight increase between 2018 and 2019 of 0.28%, future growth is expected to be at a moderate pace that is indicative in the Central Okanagan; there are a number of development projects that have been approved. It is important that PFRS be involved and maintain current building stock inventory for continuous risk evaluation.

Reference: Section 2.7 Structural Fire Risk Analysis, p.15

Recommendation #1: Maintain an updated inventory of building stock

(Suggested completion: 24-36 months)

It is recommended that the PFRS fire chief work closely with the District of Peachland Planning and Development Services Department to maintain an updated inventory of building stock.

Rationale: *These buildings have a direct correlation on PFRS resource needs as stated in the recommended Standard of Cover document.*

Observation #2: The mission, vision and values of an organization give definition as to why they do what they do, their legitimacy and future direction. The PFRS at one time had defined mission, vision and values but over the years they have lost their meaning and relevance where they are no longer in focus for many of the members.

Reference: Section 3.1.1 Pillars of Service, p.22

Recommendation #2: Develop relevant and up-to-date set of organizational mission, vision and values

(Suggested completion: 24-36 months)

It is recommended that the fire chief use this opportunity as a team building exercise with staff to create relevant mission, vision and values that dovetail into those of the District of Peachland and post them in the fire hall for all members.

Rationale: *Mission, vision and values in an organization provides the legitimacy context for the services provided, what the leaders and members want to create in the future and how they will interact with the District, the public they serve and each other.*



Observation #3: It is important to respect and acknowledge the time commitment that is required by all of the members of the PFRS. Of particular concern is the time invested by the Peachland fire chief. Feedback from interviews have indicated that the fire chief is well respected by the district's senior leadership team, PFRS members and the general public. Besides his regular day-to-day administrative duties and leading the department, the chief as the only full-time member, tends to be the point person on all fire department committees, consulting on District development planning, lead fire prevention inspector as well as the District risk manager making him the point person for all lawsuits and claims against the District.

Some items that were identified as needing more time commitment include fire inspections, pre-incident planning, FireSmart initiatives and Standard Operating Guidelines. On his time off, the fire chief tends to be the primary "duty officer" and feedback from members indicate that he and his family attend nearly all off duty public relations events. When we review the Fire Service Time Management illustration above (Pie Chart 1), it is evident that the fire chief operates in the system far more than 5% of his time which reduces his time dedicated to improving the system and planning for the future. All those interviewed agree that the pace in which the fire chief is involved is not sustainable.

Reference: Section 3.2.3.2 Assistant Fire Chief (Paid-On-Call), p.25

Recommendation #3: Create a full-time assistant chief position

(Suggested completion: 12-24 months)

It is recommended that a full-time assistant chief position be created.

Rationale: *This would enable the fire chief to focus more on improving and planning the PFRS and delegate responsibility for fire prevention and training initiatives to another full-time manager. This position would also be involved with discipline, performance evaluations and act on behalf of the fire chief when the incumbent is away.*

The fire chief's broader scope would be more committed to liaising and collaborating with District of Peachland departments heads and Regional District of the Central Okanagan partners in Fire Dispatch and the Regional Emergency Program.

Observation #4: PFRS currently has several internal employee/employer committees and project leads. Meetings are usually conducted in the evenings to accommodate the POC firefighters.

PFRS committees include:

- Joint Health and Safety Committee:
This is the obligatory department committee as mandated by WorkSafeBC. There are five staff and the fire chief on the committee.
- New Fire Hall Committee:
This committee was initiated as part of the strategic planning process to identify the operational needs of a new fire hall. The fire chief and two captains are the PFRS members.
- Apparatus Committee:
This committee is created when a fire apparatus is due for replacement.
- Critical Incident Stress Management:
This is a group of seven peer contacts that have had Critical Incident Stress Management peer training and work as a group to support their fellow members in the first stage of Critical Incident Stress Management counselling.
- Equipment Project Lead:
A captain has been appointed to ensuring all small equipment is maintained and in working order or tagged for repairs. From time to time the lead will request help from fellow members on researching equipment or other operational needs.
- Personal Protective Equipment Project Lead:
A captain has been appointed to manage the issuing, replacement and maintenance of all personal protective equipment. From time to time the lead will request help from fellow members on researching equipment or other operational needs.

Reference: Section 3.2.4 PFRS Committees and Project Leads, p.28

Recommendation #4: Establish terms of reference for various committees

(Suggested completion: 24-36 months)

It is recommended that the fire chief formally establishes terms of reference for the various committees.

Rationale: *The current PFRS committees are considered to be working well and the only enhancement recommended would be to formally establish terms of reference for each committee.*

Observation #5: A number of POC fire services in BC and Alberta have initiated a work experience program (WEP) to address weekday response staffing shortfalls. This includes Big White, Sun Peaks, and Hinton AB. This program provides an opportunity for new NFPA 1001 Level II firefighters to gain valuable work experience and further their knowledge base by working alongside an established fire department for what is typically a 12-month assignment. During this time, these firefighters are accommodated in the fire hall and provide Monday to Friday daytime response coverage where POC firefighter availability is limited. These firefighters are provided free accommodations, are compensated for responses and are provided enhanced training opportunities.

Reference: Section 3.3.2 Recruitment, p.30

Recommendation #5: Consider a work experience program (WEP)

(Suggested completion: Dependent upon completion of the new fire hall)

It is recommended that with completion of the new fire hall, that living quarters for up to five WEP staff are included.

Rationale: *WEP firefighters are typically housed in the fire hall thereby eliminating the added step of responding from home or from their worksite. This program has proven to be very successful by decreasing response time, reducing POC dependence during weekdays, and provides enhanced staff capacity for community safety programs such as fire prevention initiatives, FireSmart and public education.*

Observation #6: The PFRS is meeting the BC OFC Playbook and respective industry standards and provides new untrained members with the approved qualifications for the Exterior Level. However some members require KSAs that are specific to PFRS. This would include but is not limited to:

- Emergency response vehicle equipment inventories
- Fire hall or equipment maintenance and operations such as the SCBA fill station
- PFRS administrative duties for hours of work, injuries, training records, etc.
- Familiarity/awareness with PFRS or District of Peachland's guidelines, policies or processes

Interviews with staff indicate that the training provided is adequate for the services that PFRS delivers and 75% of the staff survey respondents agree that training is meeting their needs. Interviewees commented that the fire chief is very proactive with getting members involved in outside training opportunities and that the department has some challenges conducting some training due to limited space and resources.

Reference: Section 3.4 Training, p.32

Recommendation #6: Establish and record a PFRS specific list of competencies as part of new member's orientation

(Suggested completion: 12-24 months)

It is recommended that the fire chief work with the fire officers to develop a PFRS specific list of competencies that all new members must be signed off in, as part of the orientation process.

Rationale: *This will improve consistency in hall and equipment maintenance by firefighters and operational effectiveness on incidents with all members have had formal training and practicing the same procedures and processes.*

Observation #7: During the staff interviews there were several comments regarding inconsistencies in training and operations due to a lack of clarity for Standard Operational Guidelines (SOG) or procedures. During training evolutions or actual emergencies the officer's discretion was used to determine expectations for training, and procedures operations at emergency incidents. The BC OFC's Fire Department Inspection and Audit Checklist is a framework to ensure that the PFRS has the necessary industry recommended Standard Operational Guidelines and Policies to ensure consistency in command leadership, training and operational procedures or processes.

Reference: Section 3.4 Training, p.32

Recommendation #7: Review and confirm that PFRS has the appropriate SOGs, pre-incident plans, and procedures for training and response operations. Further, that officer development training be established in order to enhance consistent training and operations

(Suggested completion: 24-36 months)

It is recommended that fire chief utilize the OFC Inspection and Audit Checklist to review and confirm the necessary SOGs and procedures for training and operations. Further that all officers participate training programs that focuses on consistent application of SOGs, procedures, leadership and incident command KSAs.

Rationale: *By utilizing the OFC Inspection and Audit Checklist as a benchmark for fire department guidelines and policies, it will help ensure that the basic standards for operations are covered with formal directions or guidance. Officer training in the guidelines and policies is imperative to ensure consistent operations.*

Observation #8: The District of Peachland is located in a wildfire prone location and terrain. PFRS has FireSmart literature and knowledge to pass on to residents when it is requested. Wildfire has been identified as one of the highest risk emergencies to the District of Peachland. *Currently PFRS has four trained LFRs.*

Reference: Section 3.6.4 Wildland Urban Interface Firefighting, p.41

Recommendation #8: Train select members to be Local FireSmart Representatives (LFRs)

(Suggested completion: 24-36 months)

It is recommended that the PFRS enhance their FireSmart program by having a seasonal summer employment program through grants for LFRs or a FireSmart coordinator.

Rationale: *Having FireSmart qualified fire department members educating the public will help mitigate the wildfire risk and let residents know that there is grant money available to help reduce costs of removing wildland fuels around their neighbourhoods.*

Observation #9: Hazard Risk and Vulnerability Assessments are integral to good emergency planning. They ensure that emergency responders are as prepared as possible for risks that may lead to an emergency in the community. The Regional District of Central Okanagan Emergency Program is in the process of updating the regional emergency plan.

Reference: Section 3.7 Emergency Management Program and Emergency Coordination Centre, p.42

Recommendation #9: Review the current Hazard Risk and Vulnerability Assessment

(Suggested completion: 24 – 36 months)

It is recommended that the fire chief, working with the Regional Emergency Program, review the community's current Hazard Risk and Vulnerability Assessment.

Rationale: *This will help ensure it is up to date and encompassing all of the hazards and risks identified. The fire chief should also collaborate with the Regional Emergency Program Coordinator to ensure that the Peachland emergency management plan is up to date.*

Observation #10: Currently fire inspections are completed on a paper inspection template and transferred into the FDM electronic database at a later time.

Reference: Section 3.8.1 Fire Inspections, p.43

Recommendation #10: Acquire a software system to be used for property inspections

(Suggested completion: 12-24 months)

It is recommended that the PFRS acquire a software system on a portable tablet device.

Rationale: *This will allow the inspector to see previous inspections for a property and enable the input directly into the FDM records management system reducing time for re-entering data.*

Observation #11: Currently, the PFRS has as approximately 20 out of date fire pre-plans completed for buildings in the community leaving an estimated 75+ needing to be done. These out-of-date fire pre-plans create safety risks for the responding firefighters and the public. A common approach to complete fire pre-plans is a coordinated process between the building and fire departments.

Reference: Section 3.8.2 Fire Pre-Plans, p.44

Recommendation #11: *Develop fire pre-plan process and update current inventory with support from the Building Department*

(Suggested completion timeline 12-36 months)

It is recommended that the fire chief working with the building department develop a coordinated process that will update the current fire pre-plans and complete the remaining inventory of buildings requiring fire pre-plans.

Rationale: *The information contained in the fire pre-plan is critical to emergency responder when there is no property representative on site who knows the intimate details of the building or complex. The fire pre-plans are useful for any emergency not just in the event of a structure fire.*

Observation #12: A proactive fire prevention program is the greatest investment that the fire service can engage in. Teaching the public how to protect themselves and prevent fires along with inspecting buildings for fire code compliance and investigating causes of fires will save more lives and property than a well-trained fire and rescue service. Other than the mandated fire inspections, the PFRS is primarily reactive in public education, FireSmart and pre-incident planning. As mentioned earlier, it is recommended that PFRS create another full-time assistant chief position to help share the workload of fire prevention so that the PFRS can become proactive in:

- Public education in group settings, schools, care facilities and multi-family residences
- Actively promote smoke detector campaigns for private residences and mobile home parks where risks during a fire are the most life threatening
- Actively promote FireSmart in the community educating residents on how to protect their homes and apply for grants to help with the cost of fuel mitigation
- Actively pursue federal/provincial grants for community wildland fuel mitigation and work with urban foresters to create strategies on mitigating the wildfire threat to the community, especially in proximity to public infrastructure

Fire pre-planning to get the PFRS up to date on outstanding preplanning should be done to help mitigate risk to firefighters performing their duties while at fires.

Reference: Section 3.8.5 FireSmart and Wildland Fuel Mitigation Strategies, p.45

Recommendation #12: Establish proactive fire prevention, public education and FireSmart programs with the addition of a full-time assistant fire chief

(Suggested completion: 12-24 months)

It is recommended that with the addition of a full-time assistant chief position, that the fire chief establish proactive fire prevention, public education and FireSmart programs.

Rationale: *The addition of a full-time assistant fire chief will provide the workload capacity to undertake amongst other responsibilities, fire prevention and public education programs.*

Observation #13: A site visit and tour of the fire hall showed a number of issues with operating out of this facility. There is no floor or wall space to improve the congestion of equipment, accommodate personal protective equipment, telecommunications and electronics janitorial and office supplies etc. The primary consideration for fire truck replacement specifications is to ensure that new trucks will fit in the undersized bays as opposed to the operational needs of the department and community. The following observations were identified during our tour of the current fire hall:

- 1) The fire hall is located in the heart of the downtown which has and access speed limit of 30km/h. During the summer tourist season, traffic and pedestrian congestion significantly delays POC response to the hall and the emergency response.
- 2) There are no male and female shower facilities.
- 3) Male and female members must change in and out of the personal protective equipment in the bays with no privacy.
- 4) The apparatus bay area is cramped and has limitations for expansion and there is no fire exit for emergency exiting.
- 5) There is little room to pass between the front and/or back of the apparatus and the bay doors and/or back wall. This poses a challenge for garaging apparatus, doing maintenance and overall safe passage.
- 6) The building is not large enough to accommodate technological advances in fire apparatus, such as an aerial.
- 7) There is no designated area for storing personal equipment to stage prior to an event.
- 8) There is no proper storage area for items such as small equipment, tools, consumables, training material, etc.
- 8) There is no effective maintenance area to service breathing apparatus or other small equipment.
- 9) There is no space for an outdoor 'hands-on' training area at this site. There is no decontamination area at this facility. Contaminated personal protective equipment is often stored in the same area as SCBA and small equipment maintenance.
- 10) Without proper floor drainage, fire trucks are not washed in the winter months.
- 11) Storage and workspace are not functional.

Reference: Section 3.10.1 Current Fire Hall Overview, p.46

Recommendation #13: Continue the process of relocating this facility along with the design and build of the planned fire hall re-location

(Suggested completion: ongoing)

This re-location has been in the planning process for the last 24 months. Based on our observations and our interview with fire service staff, this new location will not only improve fire service functionality but overall service to the community.

This District of Peachland owns a lot on 13th Street that for years has been designated as the site for a future fire hall. Concept drawings were done in 2015. An architectural assessment of the site located on 13th street was conducted to determine the potential to accommodate the new fire hall. This assessment is detailed at Section 3.10.2.

Rationale: *Fire hall designs, and facility-life are based on growth of the community and function of the fire service. Typically, a fire hall is designed to last a minimum of 50 years. This is based on projected growth of the community and the required services. However, community growth is not guaranteed.*

Observation #14: It must be clearly understood that while this site can accommodate a new fire hall and will be a vast improvement from the current facility, it is however smaller than an average sized lot for fire department operations. It will accommodate the core business needs of PFRS with some compromises in other areas and functions. Variances will be required for parking, and reduced setbacks. Furthermore, there will be no area for a shared space (multi-use) with other emergency services, nor to conduct outdoor training or the ability for expansion as the need arises. Notwithstanding the lot size limitations this site has been deemed as suitable for the fire hall in terms of central location, geographic coverage for emergency response, accessibility for major response routes, and paid on-call staff emergency response turnout.

Reference: Section 3.10.2 Fire Hall Re-location Assessment, p.49

Recommendation #14: *Establish a capital reserve fund for the procurement of an alternate property for a future satellite fire hall site.*

(Suggested completion: 48-60 months)

In our opinion and experience, considering the level of service for this community, a fire hall site requires 1.5 to 2 acres in order to accommodate typical functions and operational requirements. It is recommended that the District Council acknowledge the limitations of this site for the new fire hall, including the concessions and variances.

In addition, we recommend the District, based upon realized community growth, commences the planning process for a second site for a satellite future satellite fire hall by establishing a capital reserve fund and initiate a procurement process for a suitable site.

Rationale: *This second site requirement is based upon the growth projections for the District. This second site would require enough space to include not only the fire hall itself but also enough room for POC parking and the ability to conduct outdoor training.*



Observation #15: Based upon extensive consultation with the Fire Chief and review of the drive thru and back in bay site design options the back in bay option provided the best utilization of the proposed site and the functional requirements of the PFRS.

Reference: Section 3.10.2.5 Schematic Design Plans, p.55

Recommendation #15: Commence next phase of construction for the new fire hall

(Suggested completion: 0-12 months)

It is recommended that the District of Peachland commence the next phase for the construction of the new fire hall as a back in bay site design as an immediate priority.

Rationale: *The back in bay site design meets the majority of the functional requirements for PFRS and optimizes the available site area.*

Observation #16: The District of Peachland has a basic capital replacement schedule for fire apparatus and higher cost ancillary equipment. The fire chief has an internal plan to build reserves to replace the self-contained breathing apparatus (SCBA), Engine 21 and Tender 21. Most other equipment has a more flexible replacement date based on opportunity, funding and maintenance costs.

Reference: Section 3.11.4 Vehicle and Equipment Maintenance and Replacement, p.68

Recommendation #16: Identify life span of each apparatus and create a replacement schedule and cost structure

(Suggested completion: 12-24 months)

It is recommended that the fire chief, in collaboration with the director of finance, identify the more costly ancillary equipment that must be planned for replacement and identify the life span for each fire apparatus and create a formal schedule and cost structure to meet the capital asset replacement needs of the PFRS. This plan should be updated annually with updated replacement costs of equipment so the annual contribution to the reserve can be maintained.

Rationale: *With comprehensive planning for future capital expenditures, the fire department and community will be better prepared as the PFRS equipment ages.*

Observation #17: Requests for apparatus maintenance service is typically made by phone call or text to the mechanic and follow up on status of work is done informally. For liability purposes all vehicle inspections, maintenance and repair of emergency vehicles should be well documented. It should be possible to extract all maintenance, repairs and inspections for each individual fire department vehicle.

Reference: Section 3.11.4 Vehicle and Equipment Maintenance and Replacement, p.68

Recommendation #17: Adopt an electronic method of documenting vehicle service maintenance (requests, status or work and completion of work)

(Suggested completion: 12-24 months)

It is recommended that the PFRS and vehicle maintenance department adopt an electronic method of documenting service requests, status of work and completion of work. This electronic maintenance should be available for the fire chief to review when needed or a reoccurring scheduled meeting or phone call should take place to keep the fire chief informed on status and priorities of all work requests. All hardcopies of pre-trip/ post-trip vehicle inspections conducted by qualified PFRS staff should be kept for a minimum of a year or scanned to electronic files.

Rationale: *There is a legal obligation to document particular fire apparatus service and maintenance and having an electronic system to manage and schedule this work and documentation will be easier for staff and ensure that records are consistent and complete. With granted access to the software system, the fire chief is able to monitor the status of the PFRS fleet without having to get updates from the maintenance staff.*

Observation #18: PFRS relies on Kelowna Fire Department Dispatch Centre (KFD) to provide statistical data on their responses. There were challenges in obtaining the necessary 6-year PFRS response data that could be analysed. Working closely with the software vendor, this information was able to be generated. The response data should be developed into recurring reports that monitor the recommended service levels approved by council in the SOC and should be shared with stakeholders and PFRS staff going forward.

Reference: Section 4.1 Response and Service Categories, p.77

Recommendation #18: Obtain, analyse and report PFRS incident call data

(Suggested completion: 0-12 months)

It is recommended that PFRS administration develop a process with the software vendor to recurring reports of incident response data and analyzed against the approved service levels.

Rationale: *Established service delivery standards as recommended in the SOC provides the fire chief with the opportunity to monitor response data, adjust when necessary, and the accountability method to advise Council on the PFRS performance.*

Observation #19: The PFRS has shown a reasonable response time for the 6-year period that was reviewed. It is difficult for a POC fire service to consistently meet the recommended NFPA 1720 response times; however it is a standard that should be strived for. Where opportunities are identified to improve response times, they should be pursued.

Alternative strategies, particularly during normal daytime work hours, may significantly assist with decreasing the time to provide sufficient resources to the scene of an emergency. The feasibility of programs such as the work experience program (WEP, see appendix D) or establishing station days for PFRS staff should be explored. Station days are when firefighters on a day off can work in the hall during workday hours. This includes a flat rate of compensation for the day with responsibilities such as basic maintenance and cleaning of equipment and vehicles, additional training, and other duties assigned by the fire chief. These programs along with the addition of the recommended assistant chief position would assist in ensuring sufficient firefighters are available for response during the normal workweek daytime hours that have proven to be an ongoing challenge for the PFRS.

Reference: Section 4.2.3 Effective Response Force, p.83

Recommendation #19: Conduct a detailed analysis of the POC turnout times and if deemed appropriate explore possible initiatives enhance response times

(Suggested completion: 12-24 months)

It is recommended that the fire chief conducts a detailed analysis of turnout times based upon time of day, week, and month. Should the trend from this analysis indicate gaps during normal workweek hours the Fire Chief should then explore the WEP program and/or station days to address the lack of available PFRS staff during these periods.

Rationale: Lack of available POC staff during work-week hours could be offset with alternative programs such as WEP and station days.

Observation #20: PFRS has been declared an Exterior Operations Level Firefighter service by council as required by the British Columbia Fire Commissioners Office. This category stipulates the minimum level of firefighter training and operational capabilities. Fire service SOP/SOG's are required to conform to the approved level of service. PFRS will provide interior operations where sufficient trained firefighters and equipment are available.

PFRS has SOPs and SOGs for most of their operations. Maintaining current SOGs/SOPs is a labour-intensive undertaking for most departments. Discussion with the PFRS Administration confirms the struggle with keeping these essential polices and guidelines current.

Reference: Section 4.2.4 British Columbia Fire Service Minimum Training Standards, p.88

Recommendation #20: Establish an efficient process to review and updated SOGs and SOPs

(Suggested completion: 6-18 months)

It is recommended that the fire chief establishes a procedure that maintains SOPs/SOGs up to date and includes an accountability process to ensure all staff review on a recurring basis to ensure understanding and compliance.

Rationale: *This is considered an essential requirement to comply with the current Occupational Health and Safety Guide for Firefighting.*

Observation #21: PFRS cannot meet the BCBC 10-minute total response time for 90 percent of the incidents. Where a fire department is unable to respond to a fire within 10 minutes more than 90% of the time, buildings must have greater protection from exposure fires. This can be achieved by two approaches. One approach is to increase the setbacks for new construction along adjacent property lines. Another approach is to reduce the likelihood of fire extension by improving the rated fire resistive design for exposed walls and unprotected openings, as well as the installation of residential sprinklers. This may have a direct impact on the Official Community Plan or new developments within the District of Peachland.

Reference: Section 4.2.5 British Columbia Building Code Establishing Spatial Separation for Un-sprinklered Buildings, p.89

Recommendation #21: Establish a policy for new developments that deems all areas beyond the 10 minutes 90th percentile

(Suggested timeline: 0-6 months)

It is recommended that the District establish a policy for new developments that deems all areas beyond the 10-minute 90th percentile as required by the BCBC. This restriction should remain until such time as PFRS response times and staffing levels comply with the BCBC.

Rationale *The BC Building Code has established criteria to establish spatial separation for Un-sprinklered buildings depending on the response time of a fire department.*

Observation #22: The PFRS does not have an established Standard of Cover policy that provides a comprehensive series of benchmarks that define an affordable, acceptable, and appropriate level of service for each municipality. The SOC will ensure the fire departments has a safe and effective response force for all emergencies including fire suppression, emergency medical services and specialized response situations.

Reference: Section 4.4 Standard of Cover, p.95

Recommendation #22: Undertake a comprehensive risk analysis of the community and develop a standard of cover to effectively manage risks

(Suggested completion: 0-12 months)

It is recommended that the fire chief undertake a comprehensive risk analysis of the community. Based upon the assessed risk factors, it is further recommended that a standard of cover be developed that identifies the core services, performance benchmarks, and resource requirements.

Rationale: *The SOC is used to establish performance benchmarks for existing levels of service, providing opportunities for continuous improvement at the same time. This would also provide a well-articulated description of services to be provided to the community with the full understanding and endorsement of the elected officials. The benefits of completing an SOC will ensure that the PFRS has a clear understanding of the scope of overall risk for their community while enabling them to identify the resources and response capabilities necessary to adequately address those risks.*

Observation #23: PFRS has access to extensive amount of data captured from all their activities. Structuring a process of acquiring and analyzing the information in a consistent fashion will assist the PFRS Administration in identifying gaps in their service objectives and provide an accountability process for established service levels.

Reference: Section 4.5 Incident Tracking System, p.97

Recommendation #23: Utilize records management and data tracking software to collect and analyze response performance

(Suggested completion: 12-24 months)

It is recommended that PFRS conduct recurring reviews of response experience utilizing appropriate record, data tracking, and performance measuring tools for collection and analysis of performance objectives. Quarterly reports to the Chief Administrative Officer are the recommended frequency for these reports.

Rationale: *Properly formatted reports can provide the administration valuable feedback to their performance along with the community risks and resource requirements.*



Implementation Costs and Timeframe of Recommendations

The majority of the recommendations presented in this report are achievable using existing staff or members' time and therefore will not pose significant additional costs to the community. Other recommendations costs are estimates based on the comparable costs incurred by other similar fire departments.

Notes:

- *'Cost Neutral' refers to the use of internal staff through a normal workday schedule. Additional costs may apply if overtime is required.*
- *Undertaking of these cost neutral recommendations are contingent upon staff availability.*
- *Completed time of this document was considered in allocating term.*

To assist with the prioritization and implementation of the various recommendations three criteria were utilized: human resources, apparatus and equipment, and facility. A color-coding of red for immediate short term, amber for intermediate, and green for longer term has been applied to these criteria.

Short Term	Intermediate	Long Term
0 - 24 months	24 - 48 months	48 - 60 months



	Recommendation	'21	'22	'23	'24	'25	'26	Source	Est. Cost	Comments
1	Maintain an updated inventory of building stock							Staff time	Cost neutral	
2	Develop relevant and up-to-date set of organizational mission, vision and values							Staff time	Cost neutral	
3	Create a full-time assistant chief position							Operating budget recurring annual cost	\$ 86,000 per year plus corporate loading	Establish as part of 2022 budget process
4	Establish terms of reference for various committees							Staff time	Cost neutral	
5	Consider a work experience program (WEP)							Operating budget recurring annual cost	\$ 15,000 per year	Timeline dependent on building of new fire hall
6	Establish and record a PFRS specific list of competencies as part of new member's orientation							Staff time	Cost neutral	
7	Review and confirm that PFRS has the appropriate SOGs, pre-incident plans, and procedures for training and response operations. Further, that officer development training be established in order to enhance consistent training and operations							Staff time	Cost neutral	
8	Train certain members to be Local Fire Smart Representatives (LFRs)							Federal/provincial grant programs	\$15,000	



	Recommendation	'21	'22	'23	'24	'25	'26	Source	Est. Cost	Comments
9	Review the current Hazard Risk and Vulnerability Assessment							Staff time	Cost neutral	
10	Acquire a software system to be used for property inspections							Operating budget	\$10-15K	Depending upon preferred software system
11	Develop fire pre-plan process and update current inventory with support from the Building Department							Staff time	Cost neutral	
12	Establish proactive fire prevention, public education and FireSmart programs with the addition of a full-time assistant fire chief							Operating budget and federal grants		See recommendations 3 and 7 above
13	Continue the process of relocating this facility along with the design and build of the planned fire hall re-location							Capital budget	Estimated \$8,995,763	Total rough order of magnitude project costs (+/-35%)
14	Establish a capital reserve fund for the procurement an alternate property for a future satellite fire hall.							Capital budget annual contribution	Dependent upon suitable site and costs	Timeline based upon realized community growth projections
15	Commence next phase of construction for the new fire hall							Staff time	Cost neutral	
16	Identify life span of each apparatus and create a replacement schedule and cost structure							Staff time	Cost neutral	Does not include actual apparatus replacement cost



	Recommendation	'21	'22	'23	'24	'25	'26	Source	Est. Cost	Comments
17	Adopt an electronic method of documenting vehicle service maintenance (requests, status or work and completion of work)							Operating budget	\$1,000-3,000 one-time cost	
18	Obtain, analyse and report PFRS incident call data							Operating budget	\$1500-2,000 one-time cost	Create dashboard or other report format
19	Conduct a detailed analysis of the POC turnout times and if deemed appropriate explore possible initiatives enhance response times							Staff time	Cost neutral	
20	Establish an efficient process to review and updated SOGs and SOPs							Staff time	Cost neutral	
21	Establish a policy for new developments that deems all areas beyond the 10 minutes 90 th percentile							Staff time	Cost neutral	
22	Undertake a comprehensive risk analysis of the community and develop a standard of cover to effectively manage risks							Operating budget	\$10,000	Contracted out
23	Utilize records management and data tracking software to collect and analyze response performance							Staff time	Cost neutral	



Conclusion

This Fire Department Master Plan was completed to assist the District of Peachland and the Peachland Fire Rescue Service in evaluating their current fire services and establishing a strategy to provide efficient and effective fire, rescue and emergency services. Particular emphasis was placed upon a proposed site, evaluation, and design for a new fire hall.

By analyzing several factors to determine the effectiveness and efficiency of the Peachland Fire Rescue Service we evaluated the operational and administrative aspects of the Department, as well as the community profile, risk factors, Peachland Fire Rescue Service staffing, core services and programs, training, recruitment, and retention, facilities and equipment. Additionally, we evaluated the mutual aid agreements, regional services and current Hazard Risk and Vulnerability Assessment. The response data for Peachland Fire Rescue Service was assessed with a focus on the current performance, capabilities and alignment with both existing and projected risks, and levels of demand.

There are several observations and recommendations in this review that need to be considered to improve operational effectiveness and efficiencies. Key among the 23 recommendations is the establishment of a standard of cover policy that defines service levels, identifying the life span of each apparatus and replacement schedule, establish a full time assistant chief position, develop a proactive fire prevention program and up to date fire pre-plan process, and continue the process of relocating the fire hall to the proposed site as an immediate priority.

It must be clearly understood that while the proposed site can accommodate a new fire hall and will be a vast improvement from the current facility, it is however smaller than an average sized lot for fire department operations. It will accommodate the core business needs of PFRS with some compromises in other areas and functions. Variances will be required for parking, and reduced setbacks. Furthermore, there will be no area for a shared space (multi-use) with other emergency services, nor to conduct outdoor training or the ability for expansion as the need arises. Notwithstanding the lot size limitations this site has been deemed as suitable for the fire hall in terms of central location, geographic coverage for emergency response, accessibility for major response routes, and paid on-call staff emergency response turnout.

Although each recommendation has a corresponding timeframe, it is important to note this Fire Department Master Plan needs to be re-visited on a regular or annual basis to confirm that the observations and recommendations remain applicable. Consideration to undertake the recommendations outlined in this Fire Department Master Plan will better position the Peachland Fire Rescue Service to mitigate community risk factors, monitor response capabilities and performance, while maintaining both excellent community relationships and value for money.



Based on our comprehensive assessment of the community risks and current resources; we have found the Peachland Fire Rescue Service to be well led and managed as a 'paid-on-call' department. We would be remiss if we did not specifically acknowledge the professionalism, leadership, diligence, and continuous improvement focus of Fire Chief, Dennis Craig and the entire Peachland Fire Rescue Service team. Notwithstanding the observations and recommendation within this Fire Department Master Plan, the Peachland Fire Rescue Service continues to provide a broad range of specialized services effectively and efficiently, providing excellent value for money for the citizens of District of Peachland.

SECTION 1 INTRODUCTION

1.1 Project Background and Significance

Across Canada, all levels of government are facing strong demands for effective and efficient fiscal management. To meet these demands, elected officials are relentlessly looking for ways to reduce and avoid costs while still maintaining and increasing value in the delivery of services for their citizens.

This environment has generated the need for communities to adopt more business-like approaches for delivering public safety services. Senior fire and emergency service leadership, along with their municipal leadership realize they need to be proactive and examine all aspects of the service delivery systems and look for innovative efficiencies and effectiveness.

1.2 Project Scope

The scope and goals of this project evolved from an initial assessment of a proposed project site for a new fire hall to a complete Fire Department Master Plan (FDMP). Specifically the goals of this project were to:

- Evaluate the existing means of fire and emergency services delivery and develop a comprehensive and fiscally responsible Fire Department Master Plan (FDMP). This FDMP will provide a systematic and comprehensive approach to evaluate current fire and rescue capabilities and assist in formulating and communicating strategic directions, while highlighting opportunities for improved service delivery.
- Review the fire hall replacement needs analysis and plan. The assessment considered the effective use of the project site and be able to meet the needs of the District considering a 50-year time span.

Our study also investigated the needs of the community and will provide a point of reference upon which future decisions and priorities can be evaluated and implemented by identifying priorities, risks, challenges, and opportunities for the improvement of the delivery of emergency services. The outcomes are based on in-depth evidence-based analysis of operations and services provided to the community using applicable legislation, and 'industry-leading' practices and standards.

1.2.1 Project Objectives

This FDMP includes the proposed site and fire department space requirements to determine the most effective and efficient design for response and department operational needs. Further, we will complete a Fire Department Master Plan.

Key areas of our study included:

1. Gather all relevant District and third-party data that is pertinent for the project.



2. Collaborate with District staff and the District of Peachland Fire Department to gather information and to evaluate current and future needs as it pertains to fire and emergency services and personnel/apparatus deployment.
3. Analyze the implications to levels of service, risks and hazards and assess the complexities of the delivery of sustainable competent fire response in residential, commercial, wildland and industrial interface.
4. Conduct a strength, weakness, opportunity, and challenges analysis through the project.
5. Review current data and conduct a gap and risk analysis to provide a sampling of both current and future risks.
6. Analysis of current and future fire hall location as it relates to risk and performance.
7. Review community risk.
8. Develop a strategic document that will assist in determining the need for future resources and facilities location(s) for fire response to enable the successful operations of PFRS.
9. Complete an environmental scan of the community and a community profile, including an assessment of population trends, demographics, and community projections.
10. Review operational regulations, safety requirements, standard operating guidelines/procedures, job performance requirements, and response practices.
11. Review inter-municipal and agency agreements and relationships, to identify operational requirements.
12. Evaluate the legislated structure (bylaws) currently employed by the emergency services or the individual component thereof including all partnerships, mutual aid, fee for service agreements or other legally binding agreements.
13. Weigh the current effectiveness and efficiency of service against the risks identified within the varied areas to present options for mitigating the risk, response to and manage the risk for service delivery.
14. Conduct a community comparative analysis.
15. Review staffing to determine an optimum level of service for current and future state.
16. Analyze the current operational practices and procedures, response capacity and assess the complexities of a sustainable, competent emergency response within the study area.
17. Review existing means of delivering fire services including an investigation of any underlying issues, budgets, human resources, service delivery protocols, bylaws, etc.
18. Consult with the fire chief along with fire service personnel to understand how fire and emergency response services are delivered, with a view to evaluate existing program efficiencies and effectiveness while identifying potential enhancements.

19. Consult with Peachland's senior leadership to understand administratively and operationally what is and what is not working in fire and emergency response service delivery.
20. Conduct a fire hall replacement needs analysis and plan for the Peachland's future fire hall.
21. Identify needs, opportunities, and concerns with a view to provide recommendations on improvements or maintaining an effective delivery of service to residents, safety of emergency responders, financial efficiencies, proper infrastructure, fair compensation, and rewards for emergency responders, etc.
22. Consider the growth in population and activity within Peachland and other areas of jurisdiction over the next 5 - 10 years, and the potential impact to service delivery and operations of fire and emergency services.
23. Review all areas of service delivery including policy and procedures, staffing, fire hall locations, response times, vehicles, and apparatus (new and replacement cycles), vehicle and apparatus maintenance, other equipment, administration, training, mechanical, fire prevention, emergency planning, and public education.
24. Include recommendations and approximate financial implication and implementation plans, including timetables.

Ultimately, the FDMP will serve as Peachland's blueprint for fire and emergency services. The FDMP will include the following:

1. Address local needs and circumstances based on municipal goals, fiscal realities, and other competing demands
2. Identify and assess the nature and sources of risk in the community
3. Evaluate the resources available to address these risks
4. Identify gaps between risks and resources
5. Provide recommendations on how to address the identified gaps

1.3 Standards and References

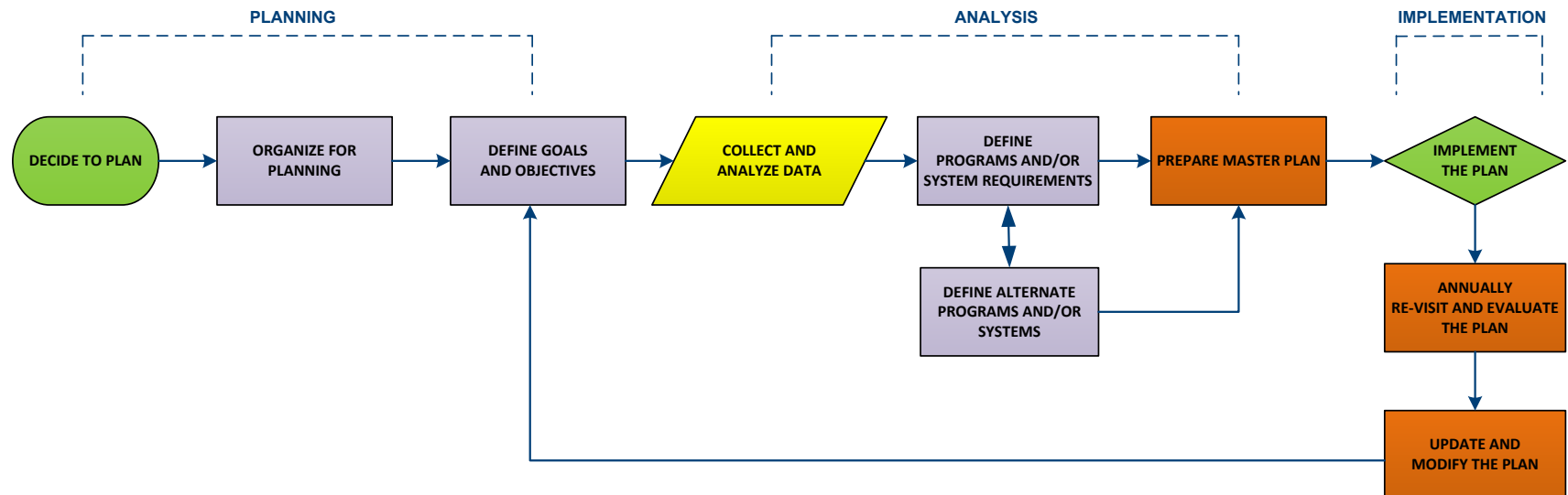
This plan considers the following references and standards:

- BC Building Code 2018
- BC Fire Code 2018
- BC Fire Services Act
- BC Local Government Act and Community Charter
- BC Office of the Fire Commissioner Structure Firefighter Competency & Training Playbook
- National Fire Protection Association's (NFPA) Standards and Guidelines
- Commission on Fire Accreditation International, Centre for Public Safety Excellence
- WorkSafe BC

1.4 Fire and Emergency Services Master Planning Process

The following diagram illustrates the process we used to complete this plan and our recommendation to maintain it.

Figure 1: Master Planning Process



1.5 Consultative Process

As part of this report, interviews were conducted with the senior leadership team consisting of the Chief Administrative Officer, Directors of Community Services, Planning, Operations, the fire chief and two PFRS captains. In addition to this, a survey was sent to all other members of the PFRS, with a 91% response rate.

1.5.1 Targeted Interviews

Targeted interviews were part of the data and information collection process. Participants were asked questions related to their areas of purview and expertise. The interview was used to promote an open discussion about the community, risks, general concerns related to the PFRS operations including strengths, weaknesses, opportunities, challenges, and anticipated changes.

Table 1: Targeted Interview List

No.	Name	Job Title
1	Cheryl Wiebe	Director of Community Services
2	Darin Schaal	Director of Planning
3	Shawn Grundy	Director of Operations
4	Joe Mitchell	Chief Administrative Officer
5	Dennis Craig	Fire Chief
6	Eric Tupholme	POC Captain
7	Alister Bishuty	POC Captain

1.5.2 Online Firefighter Survey

To obtain balanced input, we also employed an online firefighter survey. Our survey methodology offers several unique benefits. First, it offers an opportunity to gather opinions from an entire group as opposed to a limited sample of opinions from a select few. The online survey also offers an extremely flexible approach to the collection of data as respondents can complete the survey questions when it is convenient for them. Additionally, the anonymity of participants is relatively easy to control and therefore may yield more candid and valid responses.

1.5.3 Community Comparative Analysis

We conducted an industry peer comparative analysis for PFRS. This has been proven as a method of benchmarking the performance of departments to similar communities. These benchmarks include budgets, performance, effectiveness, and efficiencies. Although fire and emergency services ultimately have the same goal of protecting life and property, each community has its own unique features in how to accomplish their goals. Our main criteria for the comparative analysis are effective and efficiencies between the communities based on risk and mitigation.

1.6 Study Considerations

The following factors that affected both the assessment and effective mitigation of risk were considered and assessed.

Community-Specific Considerations

- Total area of review
- Population and future growth
- Community risk factors
- Community demographic information
- Development and Area Structure Plans
- Multi-jurisdictional requirements and cooperation
- Current and future development impact on risks and response
- Financial resources and constraints
- Impacts of Government legislation
- Bylaws affecting the emergency services
- Economic factors
- Tourism
- Construction
- Industrial activity
- Utilities
- Retail businesses and other services
- Agriculture
- Buildings and structures concentrating on high-risk demands, including business, assembly occupancies, etc.
- Municipal Emergency Management Plans

Department-Specific Considerations

- Geographic and physical boundaries for response
- Fire service annual reports
- Fire service focused reports previously conducted
- Standard of cover
- Budgets
- Current staff rosters with qualifications
- Fire hall locations and other infrastructure
- Support services
- Department structure
- Service delivery models
- Apparatus and equipment inventory, and future needs
- Building space requirements
- Operation staffing and administrative needs
- Bylaw, policies, and procedures
- Reporting structure and requirements
- Fire prevention & public education
- Emergency core service response
- Health and wellness
- Training and recruitment records and standards
- Succession planning
- Prevention programs such as Inspections, Education and Enforcement
- Records and data management
- Emergency services standard operating guidelines and procedures

SECTION 2

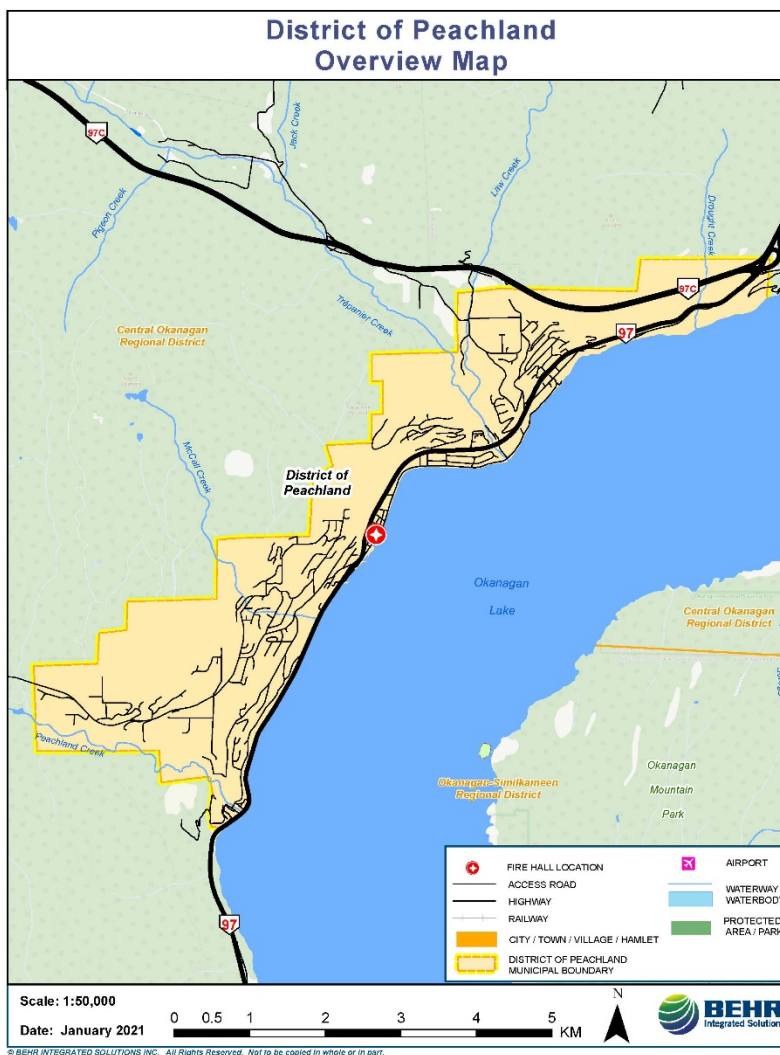
COMMUNITY PROFILE AND RISK OVERVIEW

2.1 Community Overview

Peachland is a municipal district within the Central Okanagan Regional District located on the west side of Okanagan Lake 25 km south of the City of Kelowna and 40 km north of the City of Penticton. The District has an area of 15.98 km² and a population of 5,428 (Statistics Canada, 2016 Census) and an estimated population of 5,696 in 2019. Highway 97 passes through Peachland from north to south. Peachland is bordered between the Okanagan Lake on their west side and steep mountainous terrain on the west side and is a popular destination for residents and visitors alike, taking advantage of the temperate climate, abundance of recreational opportunities, and natural beauty.

Peachland, being one of two Districts within the Central Okanagan Regional District (Lake County being the other) with close proximity to the Cities of Kelowna, West Kelowna and Penticton, makes it a desired for both young families and retirees.

Map 1: District of Peachland Overview



2.2 Economy

Peachland's economy is primarily based on tourism, marine and associated services which continues to play an important role in the economy of this District. Peachland does not have an industrial base and depends on residential and limited commercial taxation.

2.2.1 Economic Indicators

Peachland is the southern-most community within the Central Okanagan Region, and both contributes and is impacted by the economic conditions of the Central Okanagan Region. As well Peachland being centrally located between the Cities of Kelowna and Penticton contributes to a thriving hub for tourism.

Peachland maintains a number of major industry types in support to the Central Okanagan Region, including:

- Professional and technical services
- Retail
- Accommodation and food services
- Administrative and support
- Finance and insurance
- Transportation and warehousing
- Construction

While Peachland has shown modest growth in the past 10 years, the central Okanagan region has consistently showed strong growth as a result of a competitive tax climate, temperate climate and thriving tourism.

2.3 Growth Projections

Peachland has an estimate population of 5,696 in 2019. The District has experienced a gradual, but steady growth in population over the course of the last decade (see Table 2). Although there was a slight increase between 2018 and 2019 of 0.28%, future growth is expected to be at a moderate pace that is indicative in the Central Okanagan, unless significant development proposals come to fruition. In which case Peachland could see significant population increases over a 10–15-year period.

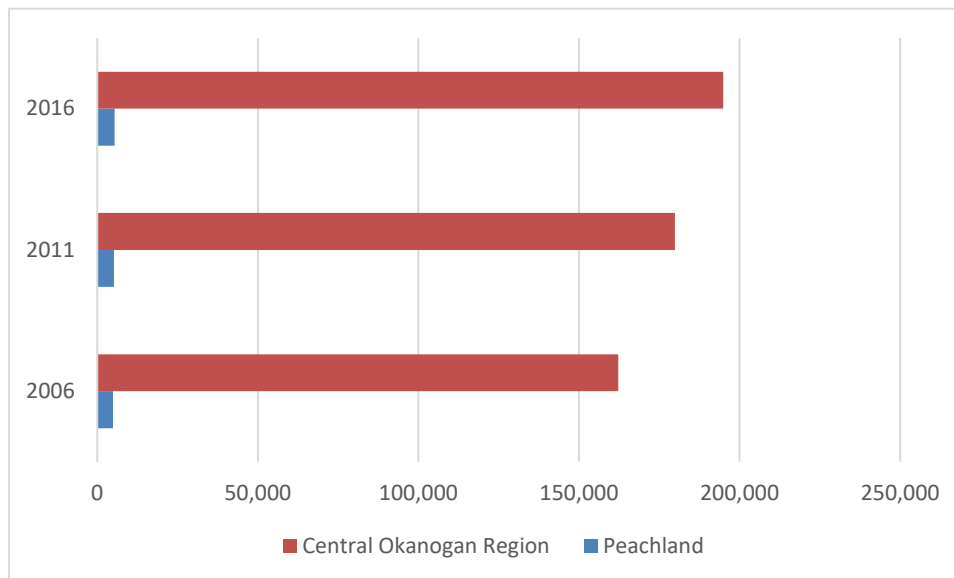
Peachland's 2020 population could be estimated as high as 6,253 and forecasted over 11,000 by 2036. Statistics from the 2016 Peachland Census show a population of 5,428 which is an increase of 4.4% over the 2011 population.

Table 2: Peachland and Central Okanagan 10-Growth Trend¹

Year	Peachland	Central Okanagan Region
2006	4,888	162,276
2011	5,200	179,839
2016	5,428	194,882

¹ Statistics Canada. 2016

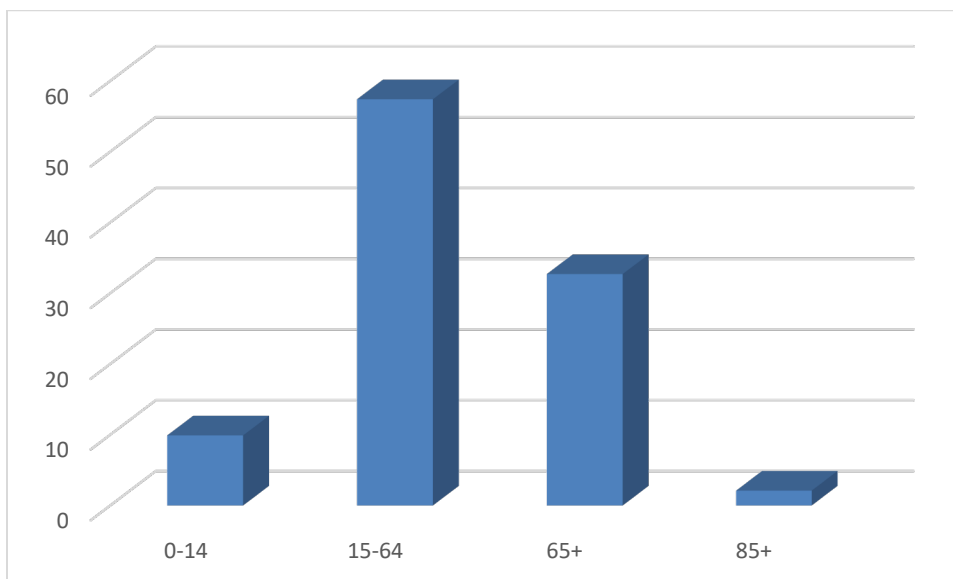
Chart 1: Population Growth 2006-2016



2.3.1 Community Demographics

In 2016, Peachland census showed over 50% of the population, (57.4%), was between 15 and 64 years. The cluster of residents 65 years and older is significantly greater than that reported across the British Columbia (32.7% vs 18.3%).

Chart 2: Percentage of Population by Age Categories²



² Statistics Canada. 2016

Table 3: Average and Median Age³

Population	Peachland	British Columbia
Average age of population	51.8	42.3
Median age of population	57.9	43.0

2.4 Community Planning and Development

Peachland development is relatively stagnant. Private dwellings have increased from 2,324 in 2006 to 2,460 in 2016. The majority of commercial development is in the downtown core and the Clements Crescent shopping centre. Industrial land zoned as light industrial and warehousing in the northernmost part of the built-up area has no significant industry.

The primary land use in Peachland is residential development. Of the 2,460 occupied private dwellings reported in the 2016 Census, 77.9% were single-detached homes, 15.2 % are designated as apartment, 11.8 % designated semi-detached, and 3.3% designated as moveable. There were no multi-story (4+) apartments reported.

2.5 Community Risk Assessment

Every municipality has unique characteristics and challenges contributing to risk. Risk can be managed through either accepting the risk, insuring against damages, or investing in risk prevention and mitigation strategies. Local governments typically employ a combination of these approaches. In general, the risks and management strategies of a community are relative to a municipality's financial capacity, geography, population demographics, fixed assets, and critical infrastructure, as well as overall service delivery.

This study provides a high-level community assessment of risk associated with fire and hazards, specifically focusing on the high priority risks managed with a fire department response. High priority risks are those associated with a high consequence or those that have moderate consequences and greater likelihood of occurring. The overall purpose of conducting a risk assessment is to establish an immediate, short-term, and long-range general strategy for the management these types of community risks.

Conducting a risk assessment is the first step towards establishing a strategic plan to manage community risks based upon local fire department response capabilities. The results are used to assist the municipality in making informed decisions regarding the allocation of limited fire prevention and fire response resources.

Risk Evaluation

- *Identify the existing risks and assign a value to specific risks based on quantitative and qualitative data*
- *Identify fire department management strategies for high priority risks*
- *Predict future risks*

³ Statistics Canada. 2016

2.5.1 Factors Contributing to Risk

As mentioned, every municipality has unique challenges and characteristics contributing to the overall risk profile of the community. Some general examples of challenges that may impact community risks include:

- Fire/rescue service model and response capacity
- Population and demographics
- Population growth rate
- Industry types
- Economy
- Rate of development
- Transportation corridor types
- Topography
- Weather
- Historical response data

2.5.2 Risk Management

All communities require a process to identify and actively manage high priority risks. As previously discussed, there are several approaches to managing risk. The focus of this report is to identify and discuss specific risks, and unique community characteristics that contribute to risk, typically managed through fire prevention or fire department response. Image 1 describes the risk management cycle. The first step in the risk management process includes the assessment of the probability and consequence of specific risks. This assessment will identify key risks which are then evaluated against the current prevention or response strategy to identify potential service gaps. The third step in this cycle includes adjusting fire prevention and response service levels to manage the resources necessary to pre-emptively mitigate or respond as determined by approved service levels. The final step in the cycle is to measure and report results to key policy makers. This cycle should be repeated periodically to address changes in the risk profile and make thoughtful and informed decisions regarding strategies to manage any changes.

Image 1: Risk Management Cycle



In Canada, local governments are charged with delivering most of the fire and rescue response services for its citizens. Elected officials are the authority having jurisdiction who ultimately determine the level of service required to manage fire and rescue risks to an acceptable level within their jurisdiction. The challenge for elected officials lies in



determining the best balance between investments in adequate emergency services and accepting a certain level of risk.

2.6 Risk Evaluation vs. Service Levels

The evaluation of fire or rescue risks considers both the probability and consequence of emergency event types. The probability of an event is quantified by analyzing historical, current, and projected data. The consequence of the event type or risk is based on an informed assessment of the potential impact on a community should the event occur.

Probability – The probability of a risk, or event type, is the determined likelihood that an event will occur within a given time. The probability is quantified by considering the frequency of event type data. An event that occurs daily is highly probable and therefore higher risk. An event that occurs only once in a century is assessed as a lower risk as it may never occur.

Consequence – There are three types of consequences when considering possible fire/rescue response requirements:

- **Life-Safety Impact:** Life-safety risk for victims and responding emergency personnel are the highest order of consequence when considering the risk associated with specific event types. Events with a high likelihood of injury/death occurring and even a moderate probability of occurring require close examination to ensure adequate resources required to safely rescue or protect the lives of occupants from life-threatening are accessible to respond. Incidents that risk life-safety include motor vehicle accidents, extreme weather, flooding, fire, release of hazardous materials, medical emergencies, and all types of rescue situations.
- **Economic Impact:** Events with high negative impact on the local economy are devastating to a municipality. For example, the fire loss of a large employer's property or key public infrastructure in smaller municipalities can be difficult to recover from. Therefore, providing adequate response capacity necessary to manage these types of events must be considered.
- **Environmental Impact:** Negative environmental consequences resulting in irreversible or long-term damage to the environment must also be considered in the analysis. Events with risk of negatively impacting water, soil and air quality are also likely to impact life safety as well as the economy and therefore must be considered.

Social and cultural impacts as experienced with the loss of historic buildings, recreation facilities or non-critical community infrastructure, are considered but do not typically affect how resources are deployed.

As discussed, the risk evaluation process is used to identify high priority risks and the appropriate risk management strategy. Where a fire department response is determined to be the most appropriate management strategy, adequate fire department service levels should be established to safely manage the risks. Elected officials are responsible for determining which services are delivered and setting service level goals. The service level goals determine the

necessary concentration and distribution of either fire prevention or emergency response resources to safely manage the identified risks.

Distribution refers to the number of fixed resources, such as fire halls, and where they are placed throughout the community. Distribution varies depending on factors related to the number of incidents and types of calls for service in the defined area.

Concentration refers to the assembling of resources, such as a specialized work force and equipment, needed to effectively respond to an incident in each area within the community. It must also identify the availability of additional response resources including the reliability and time of arrival of a secondary responding unit.

The risk evaluation matrix (see Fig.2) can be divided into four levels of risk based on the probability and consequence, each with specific implications for the concentration and distribution of resources. It is provided as a reference and context for use of the matrix to quantify fire response risks in your municipality. Different quadrants of the risk matrix need different response requirements.

Table 4 offers examples of categories of types of structural fires and general hazards commonly found in communities.

As described above, these risks are categorized by considering the probability and consequence of the fire or hazard. This qualitative analysis is based on experience and expertise, and should be completed with input from fire, building and emergency management officials. Every community will have a unique risk inventory contributing to its risk profile.

Figure 2: Risk Evaluation Matrix

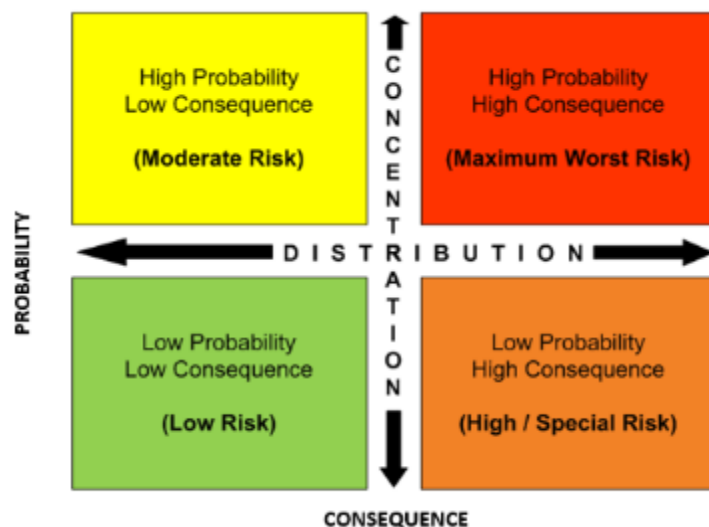


Table 4: Risk Inventory (Sample Only)

Low Risk = Low Probability and Low Consequence This category is limited to areas or incidents having a low probability of fire risk and low consequence for the potential for loss of life or economic loss. Some low risks include: • Outdoor fire pits • Non-structure lightning strikes • Vacant land • Parks without structures • Isolated structures such as sheds	
Moderate Risk = High Probability and Low Consequence Most responses fall under this category. Moderate risks include: • Motor vehicle collisions • Carbon monoxide detection (emergency medical co-response) • Monitoring/local alarms • Vehicle fires • Dangerous goods incidents with small quantities of a known product (20 litres or less), outdoor odours (natural gas or unknown) • Miscellaneous explosions • Emergency standbys • Smoke • Odours • Fires: ○ garbage ○ detached garages ○ single or multi-family residential fires ○ small non-residential buildings less than 600 square meters	
High Risk = Low Probability and High Consequence There are very few properties/responses that are considered low probability, high consequence. These properties are categorized as large properties, over 600 square meters, without adequate built-in fire protection systems, or that has large concentrations of people or has a significant impact on the local economy. High risks include: • Commercial, industrial warehouse • Dangerous goods incidents with large quantities of known products (75 litres or more), unknown products or large exposure • Care homes, institutions • Transportation of dangerous goods • Bulk fuel storage facility fire/explosion	
Maximum Risk = High Probability and High Consequence This category of risk can be generally categorized as properties over 600 square meters that have high economic value in the form of employment or are not easily replaceable, or natural disasters occurring in highly populated areas, creating high life and property loss potential and strains on the department and other agency resources. Damage to properties in this category could result in temporary job loss or permanent closure of the business. Such properties are highly regulated or possess built-in fire protection systems. Some maximum risks include: • Wildland fires • Weather related events (floods, tornadoes, severe storms etc.) • Large vehicle accidents, pileups, • Quantities of known products (+500-1000 litres), indoor natural gas odour • Explosions or substation electrical fires • Confirmed natural gas leak	

2.7 Structural Fire Risk Analysis

It is critical to use careful planning and consider alternative solutions when managing risk because the ability to increase the distribution of resources and add capacity is always limited. Spending large amounts of time and resources to manage a risk with low frequency/low consequences will have limited impact and make a minimal improvement to community safety. When planning for fire department response, the planning process includes a detailed review of the frequency of events and their potential consequence(s) to ensure prevention and response efforts maximize life safety and minimize negative consequences for high priority events.

This section describes how the risk of structure fires can be evaluated and how to use this information to inform the distribution and concentration of limited fire department resources.

Analyzing structural fire risk begins by developing an exhaustive inventory of existing building stock and monitoring changes to the inventory. This process should include staff from the planning and development departments, as well building inspectors and the fire department.). This provides fire chief with an opportunity to evaluate the BC Fire Code (BCFC) requirements in the design, construction, and operation phases of the building.

The building inventory database becomes the foundation of assessing fire risk in the community. This inventory provides a count of all property types including single and multi-family residential, assembly (including schools, churches, hospitals, personal care homes, etc.), mercantile, commercial, and industrial properties.

Once the inventory is assembled, fire department response capability is measured against the identified property risks. This simple identification of the relatively high numbers of specific high-risk property types may identify gaps in the current response model, resulting in the reorganization or addition of fire department resources. As building stocks increase, fire departments should continue to monitor response capability and capacity to ensure service levels are maintained.

Fire departments should work with the planning department and building inspectors to develop a process of monitoring the addition of new buildings or significant changes to existing properties. The process can be used to involve them in the review of building plans and identify inspectable properties. It can also inform the development of fire response preplans to prepare fire responders for the specific hazards in high-risk structures.

Table 5 provides an example of a smaller town. It is typical for single-family detached properties to make up the largest percentage of property types. As a result, fires in this type of moderate-risk structure are typically the most probable. However, the consequence of these types of fires is low relative to other residential properties, such as low-rise and high-rise multi-occupant buildings.

Table 5: *Example of Basic Building Inventory by Property Type*

Property Type	Count of Properties	% of Total Properties
Assembly (theatres, hotels convention centres, public facilities with high occupancies etc.)	40	2
Institutional (schools, hospitals, care homes etc.)	15	1
Residential -single-family;	2000	86
Residential - multi-unit	40	2
Business and personal services	100	4
Mercantile	100	4
Industrial	20	1
Total	2,315	100

As new residential, commercial, and industrial buildings are added to the community building inventory, it is important that fire departments be involved early in the planning and development process. This provides an opportunity to review and evaluate the impact on services and provide recommendations that would serve to mitigate new risk.

A list of all properties based on property type in the fire response zones of Peachland was not available. A count of residential properties was captured in the 2016 Statistics Canada Census (see Table 6.) As a result, the analysis of this data is limited to identifying that there are no apartment buildings with five storeys or more in the Peachland fire protection area. As seen below, single-detached homes are the primary residential unit type.

Table 6: *Residential Stock in Peachland Fire Protection Area⁴*

Housing Unit Counts	Peachland
Single-detached house	1,430
Apartment in a building that has five or more storeys	0
Semi-detached house	60
Row house	100
Apartment or flat in a duplex	115
Apartment in a building that has fewer than five storeys	365
Other, single-attached house	5
Mobile dwelling	75
Total units of housing stock	2,150

⁴ Statistics Canada. 2016. As retrieved from <https://www12.statcan.gc.ca/census-recensement/2016/> on August 2, 2020.



The next step to completing the structural fire risk assessment is to focus on the property types which may pose specific hazards or high life-safety risks for fire responders and the community. Large-scale or special purpose buildings such as hospitals, schools, recreation centres, care homes and multi-unit residential structures present higher risks with respect to the potential consequences to life-safety and therefore must be constructed and operated in accordance with British Columbia Building and Fire Codes. These Codes require specific life safety design features to be incorporated into the design of these properties, and those systems must be maintained for the life of the property.

By refining the focus on high-risk properties, inspectable properties are identified and a process for cyclical inspections of these life safety systems should be developed in policy. Further, fire response preplans should be completed for all high and extreme risk properties to identify the hazards, water supply, and provide a schematic of the building design.

Structural fire risk can be analyzed in greater detail by assigning fire risk values and developing risk scores specific property types in specific fire response areas, also known as demand zones. In municipalities with multiple demand zones, risk scores can be used to highlight regional differences in the risk profile of a municipality and determine appropriate service levels for the region, and the concentration and distribution of fire resources.

Table 7 illustrates one approach to identifying differences in risk profiles for individual demand zones. This approach quantifies risk by developing risk scores for property types. The large and special use property types are assigned a value based on the qualitative assessment of risk and designated as low, moderate, high, and extreme risk properties. Values are assigned to each of those property types by designations, for example: low risk= 1; moderate risk=2; high risk =3; and extreme risk=4. A count of each of these properties is completed within a specific demand zone. The value for each property type is multiplied by the number of those properties to develop a risk score for that property type within a demand zone. The risk scores for all the property types are added to produce an aggregate risk score for a specific demand zone.

Table 7: Example of Fire Risk Assessment by Property Type for a Demand Zone

Property Type	Qualitative Risk Assessment Low=1, Moderate=2 High=3, Extreme=4	Count Of Properties In Demand Zone	Risk Score
Assembly (theatres, hotels convention centres, public facilities with high occupancies etc.)	High (3)	40	120
Institutional (schools, hospitals, care homes)	High (3)	15	45
Residential (excluding single-family homes)	High (3)	30	90
Business and personal services	Moderate (2)	40	40
Mercantile	Moderate (2)	15	30
Industrial	Extreme (4)	5	20
Demand Zone Score			345

As discussed, this approach can be used to illustrate differences in risk across different demand zones. To further refine this approach, a weighted scale could be used to highlight specific types of high-risk properties. Additionally, individual properties could be considered uniquely as opposed to clustering properties by type. This approach requires more effort but does produce a more detailed assessment of risk.

The aggregated risk scores and specific high-risk properties can be plotted spatially with geographic information systems tools. This approach, while detailed, provides fire department officials with a method of sharing a fire risk analyses with different stakeholders, from elected officials to the public, to illustrate fire risks in an easily understood format.

Observation #1: Although there was a slight increase between 2018 and 2019 of 0.28%, future growth is expected to be at a moderate pace that is indicative in the Central Okanagan; there are a number of development projects that have been approved. It is important that PFRS be involved and maintain current building stock inventory for continuous risk evaluation.

Recommendation #1: Maintain an updated inventory of building stock

(Suggested completion: 24-36 months)

It is recommended that the PFRS fire chief work closely with the District of Peachland Planning and Development Services Department to maintain an updated inventory of building stock.

Rationale: *These buildings have a direct correlation on PFRS resource needs as stated in the recommended Standard of Cover document.*

2.8 Community Risk Analysis Overview

The following section provides an overview of the unique characteristics, hazards, and risks in Peachland specifically that impact the fire department response. This study is not intended to be a comprehensive all-Hazards Risk and Vulnerability Assessment. The discussion provides additional context to assess fire department response capability by offering an assessment of some of the medium, high, and maximum risks identified in the interview process and analysis of fire department response data.

2.8.1 Topography

One of the primary goals for PFRS is to provide consistent fire, rescue, and first medical response services in an area of 15.98 km², with challenging topography, population distribution, roadway network, and land development.

- The bulk of residential development is situated on the western side of the District of Peachland, with significant elevation changes connected by networks of winding roads
- The natural slope of the community is from west to east constrained by the shoreline of the Okanagan Lake on the eastern side of the community

2.8.2 Wildland Fires

Peachland's location in central Okanagan; surrounded by vast forestry, combined with moderate temperatures, contribute to a significant risk and threat to the community. Temperatures average around 6°C, with humidity levels averaging in the 50 % range. As well Peachland typically receives five days of rain per month averaging 29 inches annually.

Summer months in the Central Okanagan District can prove to be extremely dry and susceptible to the ravages of a wildfire. The additional risk factors of topography and roadway networks add significantly to the risk to the community through an un-controlled wildland interface fire.

These types of incidents typically involve tremendous resource requirements and operational periods of days into weeks to gain control. These wildfires may quickly exceed the capabilities



of a local fire service and require a coordinated effort from neighbouring communities, provincial resources and beyond.

2.8.3 Watershed

A number of creeks flow down the mountainside through Peachland and spill into the Okanagan Lake. Rapid thaw of snow from higher elevations and higher rainfall can increase risk for lake effect flooding. Peachland has a number of measures to mitigate the effects of overflows through preventative flow management strategies and sand bagging if necessary.

2.8.4 Roadway Network

There is only one main roadway (Highway 97) that provides access and egress for Peachland to the south and north. A significant obstruction to this highway, whether it be a landslide, flood, or other reason would become a considerable risk for the community. The ability of residents to evacuate as well as the ability of emergency responders to quickly gain access in the area could be significantly compromised.

2.8.5 Tourist Activity

Central Okanagan is a popular travel destination for visitors and tourists from other areas of British Columbia, other provinces and abroad. With many natural amenities, access to some of the finest soft fruits and wines in the world, along with its close proximity to skiing in the winter and watersports in the summer, it attracts a broad range of visitors.

The addition of visitor populations, while contributing significantly to the economic growth of the area, adds significant risk and potential increased demands on emergency services.



SECTION 3

DEPARTMENT PROFILE

3.1 Department Overview

The Peachland Volunteer Fire Brigade was established in 1909 when the community was incorporated. Since then, it has evolved into the Peachland Fire and Rescue Service (PFRS), providing the multitude of emergency services required of a modern thriving community. Besides providing fire and rescue services to residents and visitors, PFRS provides auto extrication to the Coquihalla Connector and Highway 97 outside the Peachland municipal boundary as well as marine rescue on Lake Okanagan as a part of the Regional Rescue Program.

With the consideration of the growing population within the regional district, there will be increasing challenges for existing services to keep pace with the growth of the community and tourism activity. The fire service of course, will also experience the challenge to continue to meet service level expectations because of increased call volumes. This can be further exacerbated as these increasing service demands place pressure on a volunteer/paid-on-call fire service and their resources.

Peachland is a retirement community and for the most part a bedroom community for workers in the larger communities of the Central Okanagan. Demographic statistics show that the great majority of Peachland residents are between 50-80 years old of which, 23% of residents are over the age of 65. Despite this older demographic, PFRS has been successful to keep an ample number of members with an average age in the early 30s. Younger people with aspirations of becoming a career firefighter have actually moved to Peachland for firefighting experience and commute to work.

The Regional District of Central Okanagan has a very robust Regional Rescue Program that includes hazardous materials, technical high angle rescue, auto extrication and marine rescue. The PFRS provides auto extrication, marine rescue, and low embankment rescue at operations level on behalf of the Regional Rescue Program.

The PFRS is one of eight partners in the Regional District of Central Okanagan's tried-and-true mutual aid agreement that has been activated a number of times for wildfire events over its long history. Regional emergency management with the Emergency Operations Center and Fire Dispatch are centralized at the Kelowna Fire Department.

While volunteer/paid-on-call fire services have long-valued service histories with their respective communities throughout North America, there may be a point that necessitates a transition toward a hybrid full-time/volunteer staffing model, typically referred to as a composite service delivery model. The PFRS is not currently, nor in the foreseeable future at that point and can continue the reliance on volunteer POC firefighters as a sustainable staffing model for the community.



3.1.1 Pillars of Services

The men and women of this service have dedicated their time and energy to faithfully serve their community by using training, technology, and commitment in providing exceptional paid on call (POC) service to the citizens and visitors to the community. The PFRS is a proud department that values their past, embraces the present and looks forward to the challenges of the future.

Observation #2: The mission, vision and values of an organization give definition as to why they do what they do, their legitimacy and future direction. The PFRS at one time had a defined mission, vision and values, but over the years they have lost their meaning and relevance where they are no longer in focus for many of the members.

Recommendation #2: Develop relevant and up-to-date set of organizational mission, vision and values

(Suggested completion: 24-36 months)

It is recommended that the fire chief use this opportunity as a team building exercise with staff to create relevant mission, vision and values that dovetail into those of the District of Peachland and post them in the fire hall for all members.

Rationale: Mission, vision and values in an organization provides the legitimacy context for the services provided, what the leaders and members want to create in the future and how they will interact with the District, the public they serve and each other.

3.2 Human Resources

The heart of any organization is its people. PFRS is classified as a POC service with only a full-time fire chief and administrative assistant. The fire chief and administrative assistant are the only full-time employees. All frontline operational members are paid-on-call and respond from work/home to the fire hall then to the incident to provide fire/rescue, emergency medical service operations, as well as responding to other emergency situations in either a lead or support role. An effective organizational structure must promote and support strong, effective leadership, sound business management and continuity, and effective communication with opportunities for staff development.

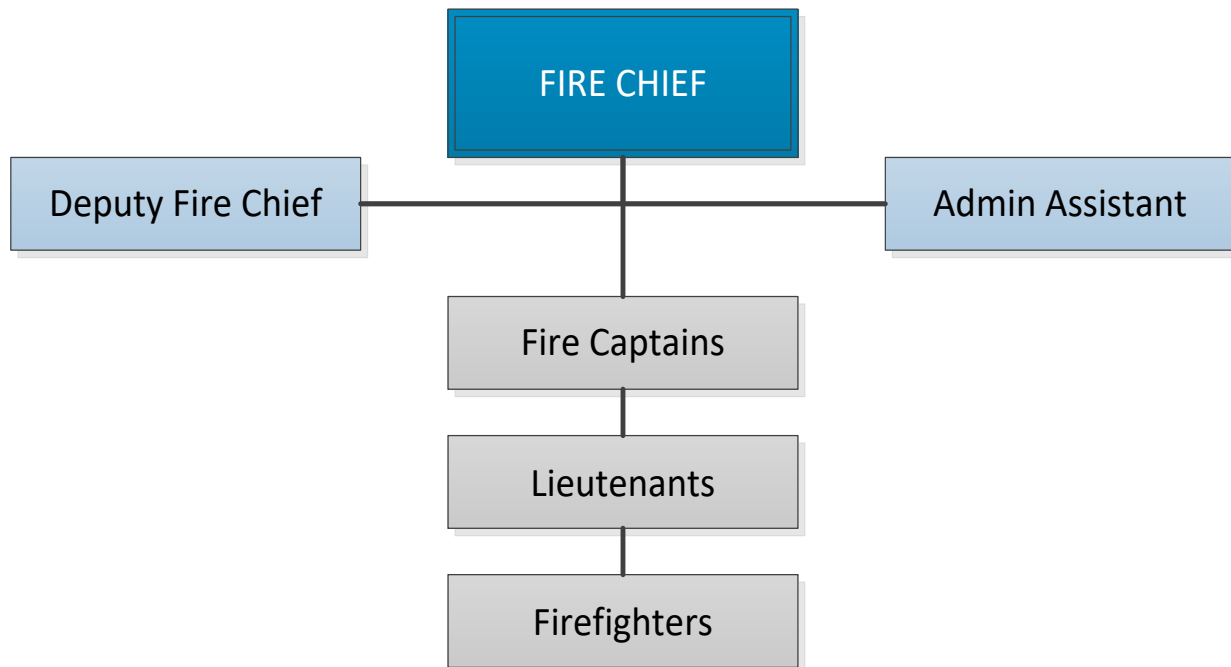
3.2.1 Staffing Complement

The PFRS currently consists of the following staff to deliver emergency services:

- One fire chief (full-time)
- One assistant chief (POC)
- Four captains (POC)
- Five lieutenants (POC)
- 22 Firefighters (POC)
- One junior firefighter (POC)
- One administration assistant (full-time)

Note: PFRS staffing levels of paid-on-call firefighters vary given the recruitment and retention challenges with POC firefighters.

Image 2: PFRS Organizational Structure (2020)



3.2.2 Department Leadership and Management

Effective and efficient leadership and management starts at the top to guide an organization towards success. Municipal officials are always looking for ways to effectively manage and avoid costs while still increasing value in the delivery of services for their citizens.

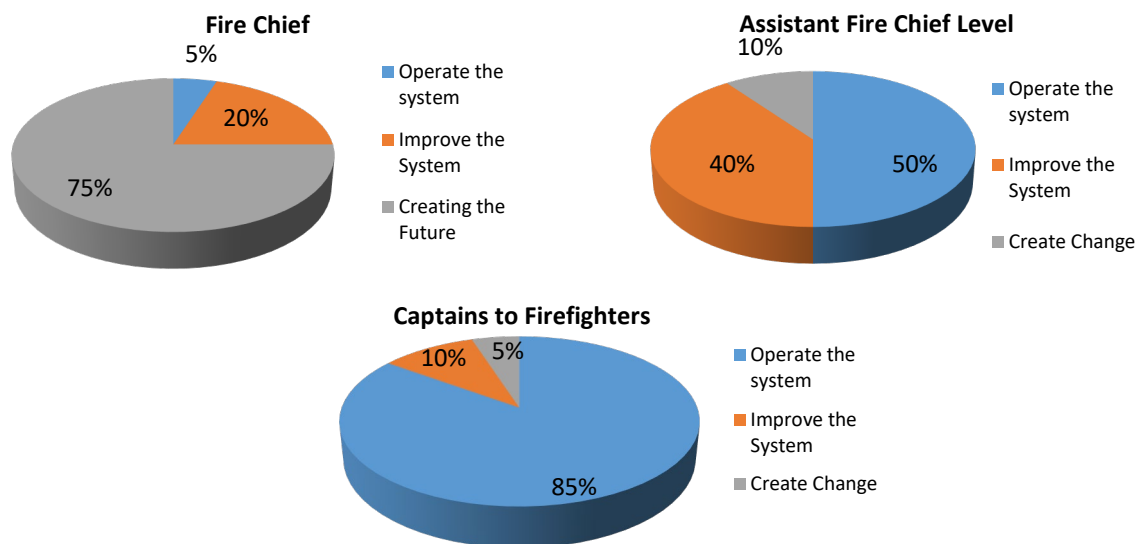
This environment has resulted in municipalities adopting more business-like approaches for delivering public safety services. Modern emergency services now require the development of business-like approaches such as:

- Conducting regular market (external) comparison and analysis
- Developing performance measures and objectives for core services including emergency response, fire prevention, public education and health and safety
- Regularly monitoring and reviewing performance against those measures to determine effectiveness and efficiencies
- Reviewing capacity and sustainability of operations
- Ensuring value for service

In some cases, this may require a shift from the historical approach of maintaining current systems, to a focus on creating a future for the department that is responsive to change, and which is sustainable and efficient. Along with their municipality's senior administration, fire service leaders need to be proactive and examine all aspects of their service delivery systems to look for innovative efficiencies and effectiveness while planning for the future.

The following pie charts offer a theoretical allocation of leadership time to effectively operate a fire department, scan for improvement opportunities and implement system improvements:

Pie Chart 1: Fire Service Time Management





3.2.3 PFRS Positions

3.2.3.1 Fire Chief (full-time)

The fire chief's responsibilities vary greatly from leadership, administration and management oversight to the many operational obligations of the PFRS. This includes occupational health and safety, fire prevention and inspections, procurement as well as being the risk management manager and occupational health and safety lead for the District. He is responsible for reviewing lawsuits and claims against the District. The fire chief is also on call after-hours from Sunday night to Friday night with the other nine fire officers taking a shift as the 'duty officer' every 10th weekend.

The current organizational chart does not reflect the wide variety of the fire chief's duties and responsibilities as the only full-time manager. A closer look at the true span of duties includes being the lead on the following that includes authorization and procuring:

Committee / delegated programs:

- Occupational Health and Safety
- Personal protective equipment
- Small equipment purchases and maintenance
- Apparatus purchase and maintenance
- Critical incident stress program
- New fire hall committee

Fire Prevention:

- Fire inspections
- Public education
- FireSmart
- Fire and life safety education

Training:

- Lead, manage, organize, schedule
- Instructors
- District of Peachland manager for Occupational Health and Safety

3.2.3.2 Assistant Fire Chief (Paid-On-Call)

The assistant chief (AC) is a POC and has no significant administrative duties. The AC assumes the role of acting fire chief when the fire chief is out of town on vacation, being the department's conduit to the Chief Administrative Officer, fire dispatch or other emergency agencies.

Observation #3: It is important to respect and acknowledge the time commitment that is required by all of the members of the PFRS. Of particular concern is the time invested by the Peachland fire chief. Feedback from interviews have indicated that the fire chief is well respected by the District's senior leadership team, PFRS members and the general public. Besides his regular day-to-day administrative duties and leading the department, the chief as the only full-time member, tends to be the point person on all fire department committees, consulting on District development planning, lead fire prevention inspector as well as the District risk manager making him the point person for all lawsuits and claims against the District.

Some items that were identified as needing more time commitment include fire inspections, pre-incident planning, FireSmart initiatives and Standard Operating Guidelines. On his time off, the fire chief tends to be the primary "duty officer" and feedback from members indicate that he and his family attend nearly all off duty public relations events. When we review the Fire Service Time Management illustration above (Pie Chart 1), it is evident that the fire chief operates in the system far more than 5% of his time, which reduces his time dedicated to improving the system and planning for the future. All those interviewed agree that the pace in which the fire chief is involved is not sustainable.

Recommendation #3: Create a full-time assistant chief position

(Suggested completion: 12-24 months)

It is recommended that a full-time assistant chief position be created.

Rationale: *This would enable the fire chief to focus more on improving and planning the PFRS and delegate responsibility for fire prevention and training initiatives to another full-time manager. This position would also be involved with discipline, performance evaluations and act on behalf of the fire chief when the incumbent is away.*

The fire chief's broader scope would be more committed to liaising and collaborating with District of Peachland departments heads and Regional District of the Central Okanagan partners in Fire Dispatch and the Regional Emergency Program.

3.2.3.3 Support Staff (full-time)

There is one administrative support positions reporting to the fire chief. This position provides support services, including clerical, secretarial and reception duties for programs and activities within the scope of the department.



3.2.3.4 Firefighters (Paid-On-Call)

The POC firefighters are expected to respond when available any time of the day or night, but because many of the 35 POC members work outside of the community, response during weekday hours can be very low with only 5-6 members attending emergency incidents.

3.2.3.4.1 Captain Firefighter I

The captain is a front-line firefighter responsible to the fire chief through the assistant chief and is required to demonstrate high-level knowledge and competence regarding all aspects of fire and rescue operations. Responsibilities include leading a team of firefighters in both emergency and non-emergency situations. This position is required to make rapid decisions under difficult conditions while considering the safety of their staff, the public and the potential consequences of such decisions. This position is required to assume an incident command role until relieved (where necessary) by a senior position within PFRS.

Captains may be assigned specific portfolios by the fire chief in such areas as personal protective equipment, equipment, training programs, or others as deemed necessary by the fire chief.

3.2.3.4.2 Lieutenant Firefighter

The lieutenant position is a junior officer position and assists with or assumes operational leadership roles for the safe and effective oversight of emergency operations. Lieutenants are assigned to individual crews by incident command to safely and effectively lead teams of firefighters to complete assigned tasks. The Lieutenant may be required to act as incident commander at emergency incidents until relieved by a higher authority.

3.2.3.4.3 Firefighter

Firefighter is an operational position who under the direction of the company officers is responsible for performing duties and services provided within the limits of their respective qualification (full service, interior or exterior). Key duties and responsibilities include responding to all categories of emergencies, performing fire prevention duties, completing general duties such as vehicle, equipment and fire hall housekeeping and basic maintenance, and participating in assigned training.

3.2.3.4.4 Recruit Firefighter

Recruit firefighters are responsible to the lead training officer or on-scene immediate supervisor for performing limited fire suppression functions under close supervision, as well as fire prevention and related duties. The recruit firefighter shall not be a member of an interior attack team and is not permitted to wear SCBA except for training evolutions. At the discretion of the supervising officer, the chief or deputy



chief, they may be permitted to support other emergency roles where proper training has been obtained. The recruit firefighter shall comply with all departmental standards, policies, and procedures.

3.2.4 PFRS Committees and Project Leads

Internal committees that involve front line staff together with administration are an extremely valuable resource for the effective and efficient operation of an organization. This is even more critical in a POC department where there is limited administrative staff such as PFRS.

Typical internal committees that are effective in a fire department include:

- A comprehensive term of reference and guidelines, with detailed roles and responsibilities of the committee and of each member including:
 - Purpose of the committee – advisory in nature to whom
 - Code of conduct
 - Composition of committee
 - Selection process for chairperson(s)
 - Schedule and timelines of meetings
 - Attendance expectations
 - Quorum requirements
 - Decision making process
 - Minutes- taking and adoption
 - Action plans with identified individual accountabilities
 - Tracking of assigned tasks
- Other elements that facilitate an effective committee environment
- Strong employee representation through selection by the employees
- Administrative representation with knowledge in committee responsibility

These committees need to be cooperative in nature and focused on important aspects for the safe and effective delivery of service. Committees are typically standing, adhoc, or sub-committees as structured by the fire chief.

Observation #4: PFRS currently has several internal employee/employer committees and project leads. Meetings are usually conducted in the evenings to accommodate the POC firefighters.

PFRS committees include:

- Joint Health and Safety Committee:
This is the obligatory department committee as mandated by WorkSafeBC. There are five staff and the fire chief on the committee.
- New Fire Hall Committee:
This committee was initiated as part of the strategic planning process to identify the operational needs of a new fire hall. The fire chief and two captains are the PFRS members.
- Apparatus Committee:
This committee is created when a fire apparatus is due for replacement.
- Critical Incident Stress Management):
This is a group of seven peer contacts that have had Critical Incident Stress Management peer training and work as a group to support their fellow members in the first stage of Critical Incident Stress Management counselling.
- Equipment Project Lead:
A captain has been appointed to ensuring all small equipment is maintained and in working order or tagged for repairs. From time to time the lead will request help from fellow members on researching equipment or other operational needs.
- Personal Protective Equipment Project Lead:
A captain has been appointed to manage the issuing, replacement and maintenance of all personal protective equipment. From time to time the lead will request help from fellow members on researching equipment or other operational needs.

Recommendation #4: Establish terms of reference for various committees

(Suggested completion: 24-36 months)

It is recommended that the Fire Chief formally establishes terms of reference for the various committees

Rationale: *The current PFRS committees are considered to be working well and the only enhancement recommended would be to formally establish terms of reference for each committee.*

3.3 Remuneration, Recruitment, Selection, Retention, Advancement, and Promotion

PFRS's goal is to select and retain the best individuals possible for any available position. The recruitment and retention of POC firefighters remains a high priority. This issue is not unique to PFRS, as most communities that rely on volunteers and/or POC firefighters to provide the necessary level of response are faced with significant challenges in recruiting new firefighters and retaining the firefighters they have.

The current rate of POC firefighters leaving PFRS has been manageable. Most recently the department experienced a turnover with some senior members leaving which gave opportunity for younger members to be promoted into leadership positions.

3.3.1 Remuneration

Compensation for the fire chief is handled through individual contracts with the District of Peachland which includes a benefit package.

Compensation for the administrative assistant is contained in the Canadian Union of Public Employees collective agreement.

As per District Council Policy PRO 193, the POC members received a wage increase as of January of 2021 which will keep them in alignment with like sized paid on call members in similar sized fire departments. Member receive pay for call out, weekend and holiday standby, practices, training courses, wildfire wage reimbursement, court duty and medical assessments. The District will also cover the cost of Insurance Corporation of British Columbia medical exams for those with class 1 or 3 driver's licenses. Officers are also given an honorarium for the additional duties that they take on as a project lead or for preparing for training events and the like.

3.3.2 Recruitment

Personnel recruitment is a key function of all emergency service agencies. The community places a tremendous amount of faith in their fire personnel, trusting them to provide the highest level of service when the public is most vulnerable. PFRS has had recent success by getting out in the public and doing face-to-face campaigns where potential candidates frequent such as gyms and local companies. PFRS has been encouraged by level of interest at their recruitment booth and what the PFRS is all about. The department recruits new members from the general public who are interested in:

- Desire to contribute to the community
- Participation in a vocation that is different from their primary employment
- Teamwork and comradery
- Continuing education, and
- Enhancing qualifications/experience towards full-time firefighter positions.

PFRS covers the cost and provides the necessary training to get members competent and confident in their duties. Initially training for the new member to obtain their exterior firefighter qualification takes one year and members will be on probation for six months. The eventual goal is to enable the members to achieve the full-service qualification with a NFPA 1001 certificate. It is estimated that it costs between \$10,000 to \$15,000 to train and equip a firefighter to the NFPA 1001 level.

Minimum recruitment requirements include:

- 19 years of age or older (16 – 18 years of age for junior firefighter program with restrictions)
- BC driver's license
- Provide a current criminal records check (vulnerable sections check)
- Eligible for employment: Canadian citizen, permanent resident card or landed immigrant card
- Physically able to perform the work
- Available to attend practice/ training events (Monday evenings), and
- Live within the District of Peachland.

The department is actually fortunate enough to have young aspiring career firefighters come to them looking for work as a POC member to add experience to their resumes. These people come on board with the NFPA 1001 qualification. All new members are expected to attend 100% of all practices while in their initial training. The training costs, compensation, equipment (including personal protective equipment), consumables and staff time for each paid-on-call firefighter is estimated to be \$10,000 to \$15,000 to meet the operational level qualifications.

It is typically the fire chief (in consult with the assistant chief) who approves candidates for hiring. The comments from interviewing staff were for the most part very favorable regarding the quality of recruits that are coming into the department.

Observation #5: A number of POC fire services in BC and Alberta have initiated a work experience program (WEP) to address weekday response staffing shortfalls. This includes Big White, Sun Peaks, and Hinton AB. This program provides opportunity for new NFPA 1001 Level II firefighters to gain valuable work experience and further their knowledge base by working alongside an established fire department for what is typically a 12-month assignment. During this time, these firefighters are accommodated in the fire hall and provide Monday to Friday daytime response coverage where POC firefighter availability is limited. These firefighters are provided free accommodations, are compensated for responses and are provided enhanced training opportunities.

Recommendation #5: Consider a work experience program (WEP)

(Suggested completion: Dependent upon completion of the new fire hall)

It is recommended that with completion of the new fire hall, that living quarters for up to five WEP staff are included.

Rationale: *WEP firefighters are typically housed in the fire hall thereby eliminating the added step of responding from home or from their worksite. This program has proven to be very successful by decreasing response time, reducing POC dependence during weekdays, and provides enhanced staff capacity for community safety programs such as fire prevention initiatives, FireSmart and public education.*

3.3.3 Retention

POC firefighters, like most of the working public, are very mindful of their work/ life balance and there are many other activities that vie for their time. POCs and the fire service are to be commended for their dedication and time that they commit to their fire department and community. not just in response to emergencies day and night but for the work they do in public education, training, fundraising and many other activities and initiatives taken on by the department.

The fire chief does not feel that retention is of concern at the present time. With the recent resignation of three senior officers an opportunity has developed for advancement of some up-and-coming leaders in the PFRS. The average years of service for POC firefighters is currently at seven years and has 60% of their current firefighter complement at five years or less.

3.3.4 Advancement and Promotion

Probationary firefighters will initially be trained to the exterior firefighter level and advance to interior with continued training in accordance with the Justice Institute of BC Interior Firefighter level with the ultimate goal of obtaining their NFPA 1001 certificate.

Promotion into the officer ranks is typically conducted through applications and appointment as follows:

- Fire chief - appointed by Chief Administrative officer
- Assistant fire chief - appointed by the fire chief in consultation with the Chief Administrative officer
- Captains - appointed by the fire chief (in consultation with the assistant chief and other captains)
- Lieutenants- appointed by the fire chief (in consultation with the assistant chief and captains)

The advancement and promotion process/procedures are working well and are deemed effective for PFRS.

3.4 Training

Training and competency refer to the specific programs within a fire department, which exist to support the services that PFRS provides. A prepared and competent workforce reduces risk and safely optimizes service delivery. An effective workforce-training program aligns the growth and development of personnel to the organization's mission and goals.

Training and education program activities are identified by assessing the Knowledge, Skills, and Abilities (KSA) needed for the firefighters to perform their duties as outlined in the department's SOGs and procedures. Additionally, occupational health and safety has increased the formal requirements for training and maintaining records of that training with compliance to WorkSafeBC regulations and applicable NFPA standards. When firefighters are competently trained and possess the KSAs for the services they are expected to provide, they reduce risk and increase their own safety and the safety of the public they serve.

British Columbia (BC) has enacted the 'Structural Firefighters Competency and Training Playbook' through the Office of the Fire Commissioner (OFC). This document is applicable to all fire services personnel in BC. This Playbook sets out the competencies required for specific service levels and the respective training and operational requirements that must be met by each fire department. Each authority having jurisdiction (AHJ) is required to declare the level of service that they will accept for their community. The AHJ is normally the Council or Board of the applicable local government. The rationale for this approach is to establish service levels through policy that include the KSAs for the firefighters. The three levels of service are:

- Full-Service Operations Level Firefighter
Allows activities that are undertaken by firefighters and officers trained in the full spectrum of competencies outlined in NFPA 1001
- Interior Operations Level Firefighter
Includes entry into simple structures for the purpose of control and/or extinguishment of fires
- Exterior Operations Level Firefighter
Firefighting activities restricted to the control and/or extinguishment of fire from a position external to the building or object in question

PFRS, like many POC fire departments, has formally declared that they will provide Exterior Operations level service for structure fires because they cannot guarantee an adequate number of appropriate trained members will respond to each fire. PFRS has established an aspirational goal to provide Interior Operations level service whenever the Effective Response Force (ERF) can safely perform this level of service.

Observation #6: The PFRS is meeting the BC OFC Playbook and respective industry standards and provides new untrained members with the approved qualifications for the Exterior Level. However some members require KSAs that are specific to PFRS. This would include but is not limited to:

- Emergency response vehicle equipment inventories
- Fire hall or equipment maintenance and operations such as the SCBA fill station
- PFRS administrative duties for hours of work, injuries, training records, etc.
- Familiarity/awareness with PFRS or District of Peachland's guidelines, policies or processes

Interviews with staff indicate that the training provided is adequate for the services that PFRS delivers and 75% of the staff survey respondents agree that training is meeting their needs. Interviewees commented that the fire chief is very proactive with getting members involved in outside training opportunities and that the department has some challenges conducting some training due to limited space and resources.

Recommendation #6: Establish and record a PFRS specific list of competencies as part of new member's orientation

(Suggested completion: 12-24 months)

It is recommended that the fire chief work with the fire officers to develop a PFRS specific list of competencies that all new members must be signed off in, as part of the orientation process.

Rationale: *This will improve consistency in hall and equipment maintenance by firefighters and operational effectiveness on incidents with all members have had formal training and practicing the same procedures and processes.*

Observation #7: During the staff interviews there were several comments regarding inconsistencies in training and operations due to a lack of clarity for Standard Operational Guidelines (SOG) or procedures. During training evolutions or actual emergencies the Officer's discretion was used to determine expectations for training, and procedures operations at emergency incidents. The BC OFC's Fire Department Inspection and Audit Checklist as a framework to ensure that the PFRS has the necessary industry recommended Standard Operational Guidelines and Policies to ensure consistency in command leadership, training and operational procedures or processes.



Recommendation #7: Review and confirm that PFRS has the appropriate SOGs, pre-incident plans, and procedures for training and response operations. Further, that Officer development training be established in order to enhance consistent training and operations

(Suggested completion: 24-36 months)

It is recommended that fire chief utilize the OFC Inspection and Audit Checklist to review and confirm the necessary SOGs and procedures for training and operations. Further that all Officers participate training programs that focuses on consistent application of SOGs, procedures, leadership and incident command KSAs.

Rationale: *By utilizing the OFC Inspection and Audit Checklist as a benchmark for fire department guidelines and policies, it will help ensure that the basic standards for operations are covered with formal directions or guidance. Officer training in the guidelines and policies is imperative to ensure consistent operations.*

3.4.1 Industry Recommended Qualifications

The following section outlines industry recommended training standards. Training for these qualifications should be provided for members in the respective roles. Training courses outside of these standards would be provided at the discretion of the chief of training subject to the fire chief's approval.

Assistant Chief and Fire Chief

- NFPA 472 Dangerous Goods Operations
- NFPA 1001 Firefighter (Level 2)
- NFPA 1002 Pump Operator
- NFPA 1021 Fire Officer (Level 2)
- NFPA 1041 Instructor (Level 1)
- NFPA 1403 Standard on Live Fire Training Evolutions
- NFPA 1521 Incident Safety Officer

Captain(s)

- NFPA 472 Dangerous Goods Operations
- NFPA 1001 Firefighter (Level 2)
- NFPA 1002 Pump Operator
- NFPA 1021 Fire Officer (Level 1)
- NFPA 1041 Instructor (Level 1)
- NFPA 1403 Standard on Live Fire Training Evolutions
- NFPA 1521 Incident Safety Officer



Lieutenant(s)

- NFPA 472 Dangerous Goods Operations
- NFPA 1001 Firefighter (Level 2)
- NFPA 1002 Pump Operator
- NFPA 1021 Fire Officer (Level 1)
- NFPA 1041 Instructor (Level 1)

Firefighter

- NFPA 472 Dangerous Goods Operations
- NFPA 1001 Firefighter (Level 1)
- NFPA 1002 Driver/Pump Operator
- NFPA 1006 Vehicle extrication Level 1

Operator

- NFPA 472 Dangerous Goods Operations
- NFPA 1001 Firefighter (Level 1)
- NFPA 1002 Driver/Pump Operator
- NFPA 1002 Aerial Operator
- NFPA 1006 Vehicle extrication Level 1

Training Officer

- NFPA 1041 Instructor (Level 1)
- All Qualifications required to instruct firefighters and recruits
- NFPA 1403 Standard on Live Fire Training Evolutions

Safety Officer

- NFPA 1521 Incident Safety Officer

As previously indicated, PFRS provides the required operational training for the cores services they provide to the District.

3.5 Health and Wellness

The active pursuit of employee/member health and wellness is extremely important to an organization. The benefits include:

- Decreased absenteeism
- Decrease in injuries during normal duties
- Decreased WorkSafeBC premiums
- Employee career longevity
- Improved work/home balance



As part of the District of Peachland's corporate Health and Wellness program, the PFRS has a committee and project leads that work to improve their members health and wellness on several aspects:

- Exposure tracking
- Post-fire decontamination processes
- Injury documentation
- Workplace risk identification, analysis and mitigation strategies
- Personal protective equipment maintenance and procurement
- Critical incident stress management peer counselling
- It is also noted that the PFRS members have free access to the District Fitness facility

This is considered to be an effective program and the District is commended for including the health and wellness of their POCs as part of their program.

3.6 Core Services

The fire services and the service levels provided should align with the identified community risks and the needs of the citizens. Cyclical evaluation of community risks and fire department response capability is necessary to support ongoing emergency planning. Most citizens will not have the need to access fire department services. However, when emergencies occur, service expectations are high. Good planning processes are necessary to ensure citizens get the services they expect, and the community gets good value for their investment.

The District of Peachland has a well-defined bylaw that details the level of fire service that the PFRS is capable of delivering and what level they intend to train their members to provide the aspirational goal of Interior Operations Service Level. District Policy PRO 197 reads as follows:

Service Level Policy for Peachland Fire & Rescue Service

1. Authority and Application

This Service Level Policy has been established by the District Council in accordance with the requirements of the Playbook, pursuant to the District's authority under the Fire and Life Safety and Smoke Control Bylaw. This Service Level Policy applies to the Department and its Members. It shall form the basis of the Department's training of its Members and related operational planning for fire suppression and emergency response activities.

2. Service Level Policy

The Department is authorized to provide fire suppression activities in accordance with and subject to the limitations set out in the Exterior Operations Service Level.

3. Training Members

- a) The Department shall make all efforts to train its Principal Responding Members to the standard required by the Playbook for the Interior Operations Service Level.



- b) When Members are not trained to the Interior Operations Service Level, the Department.
 - (i) Shall develop an incident scene accountability system which clearly identifies the different level of training required.
 - (ii) Levels of each Member's training by using colored accountability name tags.
- c) In consultation with the District, the Fire Chief shall be responsible for ensuring that the Department develops an appropriate training program for all positions, tasks and roles including those which are not expressly covered by the Playbook. This training program shall meet the requirements of the Playbook and the *Workers Compensation Act* and regulations.

4. Operational Guidelines, Records and Compliance

The Department shall:

- a) Develop appropriate operational guidelines implementing this Service Level Policy and the requirements of the Playbook.
- b) Maintain accurate and complete records of the training of its Members, including any refresher training, any certifications obtained and otherwise required by the *Workers Compensation Act* and regulations, such that the training level of each Member can clearly be established.
- c) Report to the District on the Department's training program, the training levels of its Members and compliance with this Service Level Policy and the requirements of the Playbook.

5. Additional Services

Notwithstanding this Service Level Policy:

- a) In relation to any particular incident response, the Department shall undertake only those emergency response activities for which its responding Members at the incident are properly trained and equipped; and
- b) The Fire Chief may expand the fire suppression activities of the Department to the Interior Operations Service Level in circumstances where in the Fire Chief's discretion, the Department has available to it at the scene adequately trained personnel and equipment.

Table 8 identifies the most frequent response types over the last five years. Medical First Responses continue to be the leading service provided by the PFRS followed by Motor Vehicle Incidents.

Table 8: PFRS Response from 2015 - 2019

Response Type	2015 - 2019
Structure / Vehicle Fire	27
False Alarms	109
Medical First Response	931
Motor Vehicle Incident	246
Wildland/ Outdoor Fires	44
Marine Rescue	64
Public Service	47

In general, PFRS is well equipped, trained and resourced to safely and competently provide the services listed above. The PFRS provides the services to manage the most commonly occurring events, and this will be discussed in greater detail below. The following section describes the core services provided by PFRS.

3.6.1 Fire Suppression

The PFRS has become more definitive on how incidents are categorized. For example, PFRS may be dispatched to a “Reported Incident” for a structure fire from the information given by the 911 caller only to find that the “Actual Incident” is for a wildland fire or smoke from a BBQ. With more accurate incident data, PFRS will be better able to identify trends and specific locations for incidents. From these statistics, PFRS can tailor their fire prevention and public education work to better serve residents.

Structural fire suppression encompasses a wide range of tactics for the control and extinguishment of fires originating from several sources. In both the interviews and survey, firefighters agreed that the PFRS is well equipped and properly trained to respond to fires, allowing safe and effective rescue and suppression tactics for the control and extinguishment of fires. PFRS maintains a modern fleet of emergency response vehicles and equipment along with a committed team of firefighter staff available for emergency response that may be called upon anytime during the day or night seven days a week.

During the interviews and within the survey, a degree of concern was expressed regarding the occasional shortfall in the numbers of firefighters responding to events.

Structure fires that require entry into the building for fire suppression and rescue require many critical tasks to occur simultaneously for the safety of both the victims and the firefighters. Each of these tasks may require one or more companies (teams) of firefighters to accomplish them safely and effectively. This is referred to as the Effective Response Force (ERF). Without enough companies of firefighters on scene, entry may be delayed until some of these tasks are completed. Critical tasks and ERF are discussed in more detail at Section 4.

In British Columbia, firefighters must be trained to the Interior Operations level to enter a building on fire with Self Contained Breathing Apparatus. That team of two firefighters must

have a backup team with equal qualifications established outside the building within 10 minutes of entry or they must exit. If there is a lack of Interior qualified firefighters on scene then all operations must be conducted from the exterior of the building until the fire is knocked down. This is commonly referred to in the fire service as the “2 in- 2 out” WorkSafeBC regulation. The National Fire Protection Association Standard for Paid on Call Fire Departments 1720 recommends a minimum of six firefighters to commence structural firefighting on a low-hazard structure in a rural setting, and four firefighters in remote settings. On average PFRS achieves approximately 30% (8-10 firefighters) turn out for weekday responses. Mutual aid with West Kelowna has been established for responses to ensure there is an appropriate ERF for structure fires in the District of Peachland.

3.6.2 Motor Vehicle Collisions

Motor vehicle collisions (MVC) with or without trapped persons can pose unique hazards to both the victims and responders. MVC response is the second most frequent service provided by the PFRS. This risk was identified in Section 2, Community Risk Profile. Highways 97 and 97C are heavily traveled primary highways in the Okanagan.

Vehicle extrication requires specialized training and equipment. Extra resources and close coordination with other emergency services is necessary for the safety of both victims and responders. Weather conditions and time of year also contribute significantly to both the severity of the incident and the effectiveness of the response.

Many of modern vehicles have added risks to firefighters, such as airbag deployment and hybrid vehicles containing fuel cells or batteries. Vehicle collisions or events involving transport vehicles often pose the additional challenge of involving dangerous goods or requiring heavy equipment to manage

PFRS firefighters have the training and equipment to safely to provide MVC response and victim extrication. The PFRS provides the training to respond to emergencies involving vehicles ranging from small passenger cars to transport and commercial vehicles as part of the Regional District of Central Okanagan Regional Rescue Program.

3.6.3 Medical First Response

Medical first response and co-response are valuable services provided by PFRS. The distribution of fire department resources often exceeds that of ambulance resources and as a result, firefighters are often able to respond to medical emergencies faster, or in support of ambulance services. Since the BC Ambulance Service must transport all patients to Kelowna General Hospital, there are times when the ambulance is significantly delayed responding from Summerland, West Kelowna or even Kelowna.

Survey and interview participants universally supported providing medical first and co-response services in the District of Peachland. Many commented that it was an important service to continue to support and that it did not overburden the PFRS. Further MFR is the highest call volume service requests for the PFRS.

3.6.4 Wildland Urban Interface Firefighting

Wildland urban interface fires are not uncommon to the Central Okanagan and specifically the District of Peachland. Being a hillside community with limited egress north and south from the area, time is always paramount in mitigating a wildfire during the dry summer months.

The PFRS has well trained wildland firefighters in accordance with NFPA 1051 and adequate equipment which includes a structure protection Type 3 trailer with enough sprinklers to protect up to 10 homes and as previously mentioned and is part of the Regional District of Central Okanagan Mutual Aid Agreement for firefighting resource requests from neighbouring communities. It is also up to the residents to help protect their properties by practicing good FireSmart methods to make their properties more resilient to wildfire.

Observation #8: The District of Peachland is located in a wildfire prone location and terrain. PFRS has FireSmart literature and knowledge to pass on to residents when it is requested. Wildfire has been identified as one of the highest risk emergencies to the District of Peachland. *Currently PFRS has four trained LFRs.*

Reference: Section 3.6.4 Wildland Urban Interface Firefighting, p.40

Recommendation #8: Train select members to be Local FireSmart Representatives (LFRs)

(Suggested completion: 24-36 months)

It is recommended that the PFRS enhance their FireSmart program by having a seasonal summer employment program through grants for LFRs or a FireSmart coordinator.

Rationale: *Having FireSmart qualified fire department members educating the public will help mitigate the wildfire risk and let residents know that there is grant money available to help reduce costs of removing wildland fuels around their neighbourhoods.*

3.6.5 Technical Rescue

Rescue operations are often unique situations that require specialized equipment and training to ensure the responders maintain the competencies to safely execute the rescue. The challenge in maintaining these skills is the low frequency of the events. As a result, fire departments offering technical rescue services must provide adequate training to maintain competencies and equipment.

PFRS offers the following technical rescue services:

- MVC rescue/ auto extrication (technician)
- Low-angle rescue (operations)

- Marine rescue (technician)
- Confined space rescue (awareness)

MVCs and associated rescue services are requested nearly daily across the Regional District. Rescue service-related Regional District of Central Okanagan SOGs identify that any firefighters involved in the use of the specialized equipment and tactics must be certified in the respective rescue specialty. The competency of first responders should be monitored and renewed, as certification alone does not ensure competency is maintained. Frequent training is necessary to maintain knowledge, skills and abilities.

3.7 Emergency Management Program and Emergency Operations Centre

Emergency Management BC legislates that all regional districts are responsible for managing the first response to an emergency event. The Regional District of Central Okanagan's Emergency Operations Center in Kelowna supports the District of Peachland in any major emergency such as wildfire or flooding. The emergency program coordinator at the Kelowna Fire Department is a resource for all regional fire departments in their planning for such a large-scale emergency. Hazard Risk and Vulnerability Assessments are critical for communities to undertake to identify those types of emergencies that are most likely to occur in their jurisdiction and begin planning to mitigate the emergency when it happens. This risk assessment can also be used proactively to reduce the chance or severity of an emergency occurring. FireSmart communities is an example of proactive work to reduce a known hazard or risk.

Observation #9: Hazard Risk and Vulnerability Assessments are integral to good emergency planning so that the emergency responders are as prepared as possible for risks that may lead to an emergency in the community. The Regional District of Central Okanagan Emergency Program is in the process of updating the regional emergency plan.

Recommendation #9: Review the current Hazard Risk and Vulnerability Assessment

(Suggested completion: 24 – 36 months)

It is recommended that the fire chief, working with the Regional Emergency Program, review the community's current Hazard Risk and Vulnerability Assessment.

Rationale: *This will help ensure it is up to date and encompassing for the hazards and risks identified and collaborate with the Regional Emergency Program Coordinator to ensure that the Peachland plan is up to date.*

3.8 Fire Inspections, Investigations and Public Education Program

Fire departments that increase their emphasis on fire prevention activities typically see a significant reduction in fire-related losses. The BC OFC has recently released their annual reports and unfortunately fire related deaths are on the rise in BC. In 2020 there were 15 fire related deaths from May to January compared to five for the same period in 2019.

Although difficult to measure, effective fire prevention programs reduce fire related deaths and property loss proportionately to the resources committed. Data collection and analysis will determine the effectiveness of these programs and their impact on the overall reduction of losses.

3.8.1 Fire Inspections

Modern building codes including life safety design and operating requirements are key component of risk management. Cyclical fire inspection programs for high-risk buildings ensure these systems continue to function throughout the life of the building. This is especially important for high occupancy and special purpose buildings such as apartment buildings, hospitals, seniors housing and schools.

The British Columbia Building Code (BCBC) and the British Columbia Fire Code (BCFC) are based upon the National Model Building and Fire Code of Canada. The BC Codes set out the technical provisions regulating activities related to:

- The construction, use or demolition of buildings and facilities
- The condition of specific fire and life-safety elements of buildings and facilities
- The design or construction of facilities related to certain hazards
- The fire protection measures for the current or intended use of buildings

The BC Fire Code mandates regular inspections for fire alarm and sprinkler systems, updated fire and emergency evacuations plans, unobstructed means of egress and other fire life-safety systems based upon the Major Occupancies Classifications and other criteria contained in the BC Fire Code. The BC Fire Code does not legislate the frequency or cycle for fire inspections as this is left to the authority having jurisdiction. In all cases, it is the property owner's responsibility to comply with the Codes.

The fire chief is the local assistant to the fire commissioner (LAFC) and currently performs the majority of the 150+ annual fire inspections, with some support provided by POC members based on availability.

Observation #10: Currently fire inspections are completed on a paper inspection template and transferred into the FDM electronic database at a later time.

Recommendation #10: Acquire a software system to be used for property inspections

(Suggested completion: 12-24 months)

It is recommended that the PFRS acquire a software system on a portable tablet device

Rationale: *This will allow the inspector to see previous inspections for a property and enable the input directly into the FDM records management system reducing time for re-entering data.*

3.8.2 Fire Pre-Plans

Fire pre-plans include information regarding the construction type, occupancy, building status, emergency contacts, utility shutoffs, fire suppression and detection systems, exposure information, water supply availability, access problems and any other hazards.

Observation #11: Currently, the PFRS has as approximately 20 out of date fire pre-plans completed for buildings in the community leaving an estimated 75+ needing to be done. These out-of-date fire pre-plans create safety risks for the responding firefighters and the public. A common approach to complete fire pre-plans is a coordinated process between the building and fire departments.

Recommendation #11: Develop fire pre-plan process and update current inventory with support from the Building Department

(Suggested completion timeline 12-36 months)

It is recommended that the fire chief working with the building department develop a coordinated process that will update the current fire pre-plans and complete the remaining inventory of buildings requiring fire pre-plans.

Rationale: *The information contained in the fire pre-plan is critical to emergency responder when there is no property representative on site who knows the intimate details of the building or complex. The fire pre-plans are useful for any emergency not just in the event of a structure fire.*

3.8.3 Fire Investigations

All fires causing injury, death and property loss should be investigated in British Columbia. The Office of the BC Fire Commissioner maintains a fire incident database and provides trend analysis to identify specific prevention campaigns based upon leading fire causes. Examples include cooking safety, smoke alarm maintenance, and fire prevention. Fire investigation results can also assist in identifying fire trends in the community.

Investigations are conducted to identify the cause and origin of fires and involve the RCMP when necessary. Fire investigation experience is difficult and slow to come by and it can be very time consuming. The PFRS has a fee for service agreement with West Kelowna Fire and Rescue for fire investigation help when necessary. This is deemed to be a very successful agreement and efficient use of specialized resources.

3.8.4 Fire Prevention Public Education

Public education programs and active involvement in the community are important efforts that inform and engage citizens to think about fire safety and risk reduction. Many primarily POC fire departments struggle to find the capacity to have firefighters engage in formalized public education programs. PFRS members do take part in promotional events where they have opportunity to educate the public about fire safety and members will attend group

meetings, schools and the like to give fire safety talks as requests come forward however, the PFRS does little proactive work to educate the public on fire safety due to time constraints.

3.8.5 FireSmart and Wildland Fuel Mitigation Strategies

Wildfire in the interface is probably the greatest known risk to the District of Peachland. The official Community Plan details the objectives identified under “Natural Hazards” wildland hazard assessment and mitigation measures on the reduction of wildland fuels. The fire chief has indicated that the PFRS struggles to commit the necessary proactive time to spearhead these types of projects.

Observation #12: A proactive fire prevention program is the greatest investment that the fire service can engage in. Teaching the public how to protect themselves and prevent fires along with inspecting buildings for fire code compliance and investigating causes of fires will save more lives and property than a well-trained fire and rescue service. Other than the mandated fire inspections, the PFRS is primarily reactive in public education, FireSmart and pre-incident planning. As mentioned earlier, it is recommended that PFRS create another full- assistant chief position to help share the workload of fire prevention so that the PFRS can become proactive in:

- Public education in group settings, schools, care facilities and multi-family residences
- Actively promote smoke detector campaigns for private residences and mobile home parks where risks during a fire are the most life threatening
- Actively promote FireSmart in the community educating residents on how to protect their homes and apply for grants to help with the cost of fuel mitigation
- Actively pursue federal/provincial grants for community wildland fuel mitigation and work with urban foresters to create strategies on mitigating the wildfire threat to the community especially in proximity to public infrastructure

Fire pre-planning to get the PFRS up to date on outstanding preplanning should be done to help mitigate risk to firefighters performing their duties while at fires.

Recommendation #12: Establish proactive fire prevention, public education and FireSmart programs with the addition of a full-time assistant fire chief

(Suggested completion: 12-24 months)

It is recommended that with the addition of a full-time assistant chief position, that the fire chief establishes proactive fire prevention, public education and FireSmart programs.

Rationale: *The addition of a full-time assistant fire chief will provide the workload capacity to undertake amongst other responsibilities, fire prevention and public education programs.*

3.9 Mutual Aid and Other Service Agreements

Large fire events or emergencies with multiple casualties will quickly outstrip the capacity of most municipal fire departments in BC. We know this from experience that during a wildfire event, fire departments with POC firefighters that may not be able to sustain a prolonged multi-day response as other commitments may conflict with firefighting activities. As a result, mutual aid and automatic aid agreements are a necessary component in adding service capacity in these low frequencies but potentially high or extreme consequence events.

PFRS has several fire service and mutual aid agreements with surrounding municipalities:

- Regional District of Central Okanagan Mutual Aid Agreement
- Regional District of Central Okanagan Emergency Program
- Regional District of Central Okanagan Regional Rescue Program Agreement
- West Kelowna Ladder Truck Agreement (also includes a fee for service on Command Staff assistance, Fire Investigation assistance)
- Regional District of Central Okanagan agreement to provide fire and medical response to the Brent Road area.
- Automatic aid into West Kelowna and automatic aid for one property on MacKinnon Rd in the Trepanier Area.

All mutual aid agreements should generally be reviewed and adjusted as required on a five-year cycle if possible. Further, where applicable, the agreements could be updated to include automatic aid. Automatic aid could be discussed with all partners for specific event types.

3.10 PFRS Infrastructure

3.10.1 Current Fire Hall Overview

PFRS has been operating out of one fire hall located on 3rd Street. The current fire hall is 60-years old and was formerly a civic works building that has undergone two significant renovations to help meet the needs of a growing department. Most notably, the second floor was added in the 1980s and another extension in the rear was done in the 1990s in order to meet the functional and operational requirements of the department. The fire chief and administration assistant share the same workspace in the reception area which is considered to be dysfunctional for administrative confidentiality.

Peachland Fire & Rescue Station 21

Address:	4401 - 3 rd St, Peachland, BC		
Use:	Fire and Rescue (attached to Municipal Hall)		
Bays:	6	Unit Capacity:	5 (only 3 for large apparatus)





PFRS provides fire and emergency response out of one permanent facility. Although the current fire hall has served the community well over the years, there were a number of issues that would preclude it from functioning safely and effectively into the future.

Observation #13: A site visit and tour of the hall showed a number of issues to operating out of this facility. There is no floor or wall space to improve the congestion of equipment, accommodate personal protective equipment, telecommunications and electronics, janitorial and office supplies etc. The primary consideration for fire truck replacement specifications is to ensure that new trucks will fit in the undersized bays as opposed to the operational needs of the department and community. The following observations were identified during our tour of the current fire hall:

- 1) The fire hall is located in the heart of the downtown which has and access speed limit of 30km/h. During the summer tourist season, traffic and pedestrian congestion significantly delays POC response to the hall and the emergency response.
- 2) There are no male and female shower facilities.
- 3) Male and female members must change in and out of the personal protective equipment in the bays with no privacy.
- 4) The apparatus bay area is cramped and has limitations for expansion and there is no fire exit for emergency exiting.
- 5) There is little room to pass between the fronts and/or back of the apparatus and the bay doors and/or back wall. This poses a challenge for garaging apparatus, doing maintenance and overall safe passage.
- 6) The building is not large enough to accommodate technological advances in fire apparatus, such as an aerial.
- 7) There is no designated area for storing personal equipment to stage prior to an event.
- 8) There is no proper storage area for items such as small equipment, tools, consumables, training material, etc.
- 9) There is no effective maintenance area to service breathing apparatus or other small equipment.
- 10) There is no space for outdoor 'hands-on' training area at this site. There is no decontamination area at this facility. Contaminated personal protective equipment is often stored in the same area as SCBA and small equipment maintenance.
- 11) Without proper floor drainage, fire trucks are not washed in the winter months.
- 12) Storage and workspace are not functional.

Recommendation #13: Continue the process of relocating this facility along with the design and build of the planned fire hall re-location.

(Suggested completion: ongoing)

This re-location has been in the planning process for the last 24 months. Based on our observations and our interview with fire service staff, this new location will not only improve fire service functionality but overall service to the community.

This District of Peachland owns a lot on 13th Street that for years has been designated as the site for a future fire hall. Concept drawings were done in 2015. An architectural assessment of the site located on 13th street was conducted to determine the potential to accommodate the new fire hall. This assessment is detailed at Section 3.10.1 below.

Rationale: *Fire hall designs, and facility-life are based on growth of the community and function of the fire service. Typically, a fire hall is designed to last a minimum of 50 years. This is based on projected growth of the community and the required services. However, community growth is not guaranteed.*

3.10.2 Fire Hall Re-location Assessment

Peachland Fire & Rescue Service (PFRS) is proposing to build a new replacement for the existing fire hall located on a land that is owned by the District of Peachland, with usable space of 0.221 acres. The proposed site is 0.394-acre located at the intersection of San Clemente Ave and 13th St. zoned as R1. The building will be required to house all required fire apparatus, administration, offices, meeting, and training. The proposed facility will also provide secure publicly accessible multi-use meeting and training rooms.

It must be noted that this assessment is conceptual with a focus on the viability of the proposed site to accommodate the new fire hall. The building program (floor plan/space allocations) will require further analysis as part of the final specifications and drawings process to confirm functionality and flow of the various spaces to support the PFRS operations and other purposes.



Observation #14: It must be clearly understood that while this site can accommodate a new fire hall and will be a vast improvement from the current facility, it is however smaller than an average sized lot for fire department operations. It will accommodate the core business needs of PFRS with some compromises in other areas and functions. Variances will be required for parking, and reduced setbacks. Furthermore, there will be no area for a shared space (multi-use) with other emergency services, nor to conduct outdoor training or the ability for expansion as the need arises. Notwithstanding the lot size limitations this site has been deemed as suitable for the fire hall in terms of central location, geographic coverage for emergency response, accessibility for major response routes, and paid on-call staff emergency response turnout.

Recommendation #14: Establish a capital reserve fund for the procurement of an alternate property for a future satellite fire hall site.

(Suggested completion: 48-60 months)

In our opinion and experience, considering the level of service for this community, a fire hall site requires 1.5 to 2 acres in order to accommodate typical functions and operational requirements. It is recommended that the District Council acknowledge the limitations of this site for the new fire hall, including the concessions and variances.

In addition, we recommend the District, based upon realized community growth, commences the planning process for a second site for a satellite future satellite fire hall by establishing a capital reserve fund and initiate a procurement process for a suitable site.

Rationale: *This second site requirement is based upon the growth projections for the District. This second site would require enough space to include not only the fire hall itself but also enough room for POC parking and the ability to conduct outdoor training.*

3.10.2.1 Site Information

Table 9: Site Location and Specifications

Municipal Address	4217 San Clemente Ave
Legal Address	Plan KAP9704 Lot 31 District Lot 220 Plan KAP9704 Lot 32 District Lot 220
Area	1017.24 m ² + 596.43 m ² = Total = 1613.67 m ²
Current Zoning	R1
Site Services available:	Water, sanitary, sewer and storm water drainage, power, natural gas, telecommunications
Parking	1 space per 36 m ² Gross Floor Area Approximate stalls required = 45 45 stalls are not possible on this site* Does not comply. The provision for parking will need to accommodate paid on-call firefighters when they come to the site. Limited daily parking will be required the provision for public parking will be maximized on the final site plan but on street parking for public will be required as well
Landscaping	As required by The District of Peachland Land Use Bylaw - Minimize landscape areas, other than Bylaw requirements, to reduce maintenance and risk of fire. - Fencing and landscaping should provide a visual buffer from the residence to the west and church to the south. - Minimal height landscaping and hard surfacing will enhance the building streetscape to the north and east, facing residential areas.

3.10.2.2 Zoning Bylaw

The site is currently zoned R1 residential. Lots will need to be consolidated and will need to be re-zoned to accommodate the project. The C-2 ZONE – Core Commercial is the most appropriate zone for this structure; however variances would need to be granted in terms of parking, the alternative to this would be to create a direct control zoning designation specifically for this use on this site.

Based on the site analysis above using the C-2-commercial core, the current strategy will not meet the Bylaw in terms of parking requirements. The proposed design will require variances for these items. We recommend that a specific zone be created for fire hall use.

Table 10: Comparison Data – Bylaw Regulations

Comparison Data – Bylaw Regulations	
Land Use District	C-2 ZONE – commercial core
Development Use	Fire Hall (7.22.19 Public Building)
Lot Area	Minimum lot area is 600 m ² (6,458 ft ²) Site is approximately 35m x 46.6m Lot area is 1613.67 m ² . Site complies
Lot Dimensions	The minimum lot dimensions on subdivision are: Width 15.0m Depth 30.0m Site complies
Density	The maximum floor area ratio (FAR) shall be 1.1 Maximum allowable building area is 1613 m ² Estimated building floor area= 1,600 m ² Programmed area has F.A.R. of 1.0 Building complies
Lot Coverage	The maximum lot coverage is 50% Maximum allowable lot coverage is 1631 x 0.5 = 815.5 m ² Building floor plate = 810 m ² . Current lot coverage is less than 50% Building complies
Setback Requirements	Front yard (West) 0 m Rear yard (East) 0 m Interior side yard (South) 0 m Exterior side yard (North) 0 m Building complies
Parking requirements	1 stall per 36 m ² – 1600/36=44.4 therefor 45 stalls required
Site Adjacencies	North side: San Clemente Avenue South side: Church East side: 13 th Street West side: Residential lot

3.10.2.3 Building Code Classification

Based on BC Building Code 2018 this project falls under the following classification:

- Group A, Division 2, up to 2 Storeys

Table 11: Current Proposed Design

Current Proposed Design	
Building Height	12.5m
Building Area	1,600 m ²
Major Occupancies	
Group A2 -	Assembly Occupancy (Classrooms)
Group D	Business and Personal Services Occupancy (Administrative Areas)
Group E	Low-Hazard Industrial Occupancy (Apparatus Bay and Support Areas)

3.10.2.4 Building Program

Table 12: Fire Hall Specifications

Space	Area (+/-)	
	M ²	Ft ²
Main floor		
Reception	19	205
Washrooms	27	291
Fire chief office	14	151
Interview room	23	248
Elevator	5	54
Utility 21	46	495
Marine/rescue	61	657
Hose tower	19	205
Engine 21	112	1,206
Pumper21	111	1,195
Tender21/trailer	111	1,195
Squad21	95	1,023
Washroom	27	291
Hose racking	19	205
Hose tower	19	205
Gear room/laundry	42	452



Space	Area (+/-)	
	M ²	Ft ²
Workshop tool & spare storage	25	269
SCBA repair / cascade / compressor	5	54
Antique truck	26	280
Emergency generator	12	129
Main floor subtotal	814	8,762
Second floor		
Multipurpose room	33	364
Mechanical room	15	171
Electrical room	15	171
General storage	15	171
Female dorm	15	171
Male dorm	33	365
Terrace	32	351
Kitchen zone	27	299
Dining area lounge	36	398
Gym	116	1,255
Dayroom/lounge/training public portion	115	1,239
Furniture storage	13	149
Female WC #1	3	36
Female WC #2	3	36
Male HC WC #1	5	54
WC showers/lockers	15	161
Office	10	114
Open space offices	40	436
Office	10	117
Second floor subtotal	562	6,057
Total assumed net area	1,376	14,811
Estimated circulation	224	2,411
Total estimated gross building area	1,600	17,222

3.10.2.5 Schematic Design Plans

Image 3: 5 Bay Drive Thru Option



Image 4: Back-in Bay Option

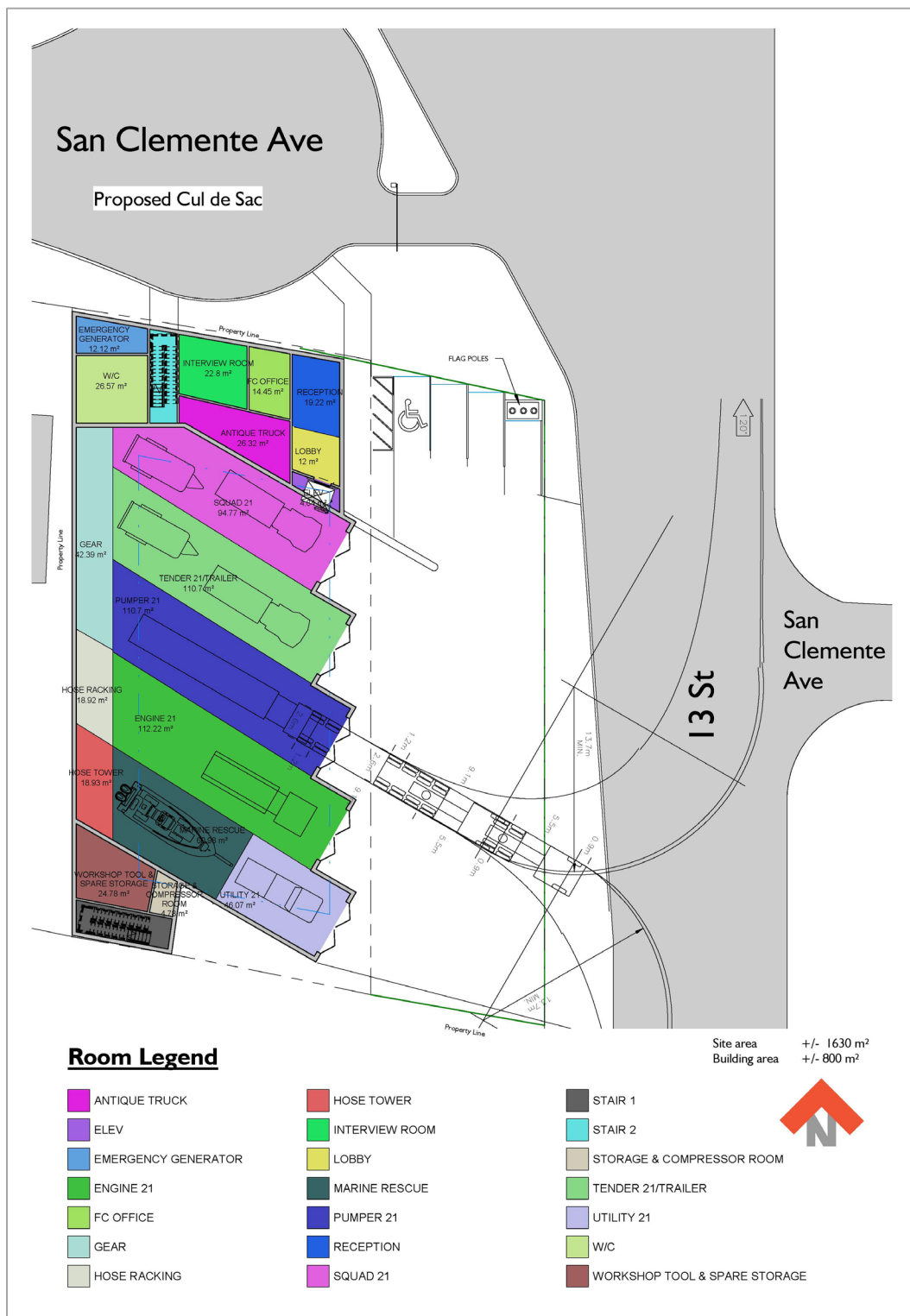
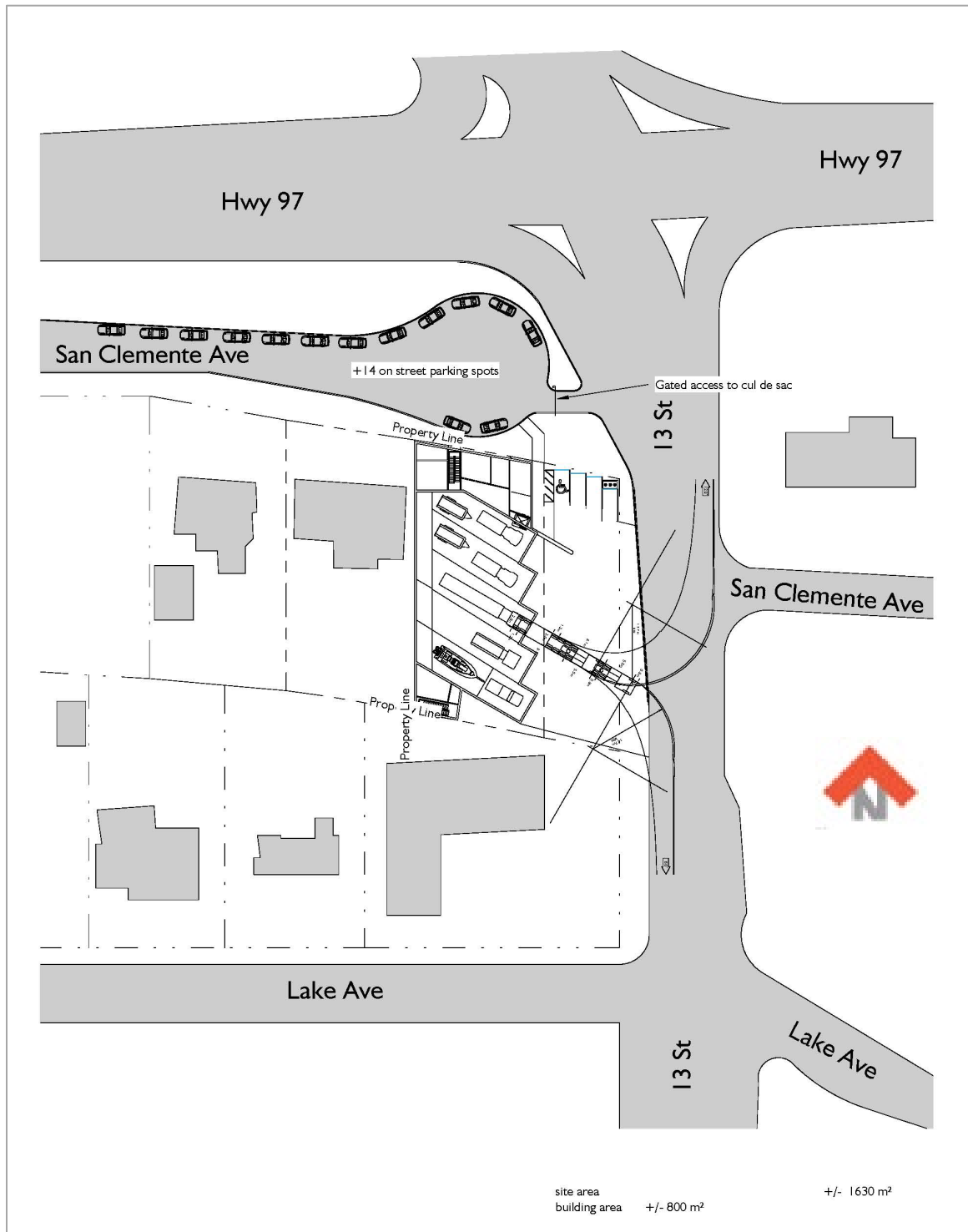


Image 5: Site Area Plan



Observation #15: Based upon extensive consultation with the Fire Chief and review of the drive thru and back in bay site design options the back in bay option provided the best utilization of the proposed site and the functional requirements of the PFRS.

Recommendation #15: Commence next phase of construction for the new fire hall

(Suggested completion: 0-12 months)

It is recommended that the District of Peachland commence the next phase for the construction of the new fire hall as a back in bay site design as an immediate priority.

Rationale: *The back in bay site design meets the majority of the functional requirements for PFRS and optimizes the available site area.*

3.10.2.6 Rough Cost Estimates

Due to the early stage of development provided by this study and the varying level of detail available at this stage for each area, various percentages for design/estimating contingencies are carried as specified below. Assumptions are outlined under each component.

Table 13: Cost of Functional Program

Cost Category	Cost (Estimated)
Main Building (includes design / estimating contingency of 10%)	\$7,911,200
Assumptions: 2-storey building with a footprint of +/- 876 m ² (9,429 ft ²) and a second floor of 724 m ² (7,793 ft ²) of developed space Total area= 1,600 m ² (17,222 ft ²) Cost calculated on \$4,944.50/m ² or \$459/ft ²	
Site Work (includes design / estimating contingency of 20%)	\$120,000
Includes all site works required for the above areas as well as the landscaping, fencing, roadwork etc.	
Permits & Testing (1.2%)	\$110,000
For Development and Building Permits (DP & BP) and material testing during construction.	
Soft Costs (Architecture, Engineering Fees)	\$854,563
Soft cost estimate includes all Architectural, Engineering, Engineering, Energy Modelling, and Legal Fees for the project.	
Total Order of Magnitude of Project Costs	\$8,995,763

This cost estimate is presented as an estimate of probable costs and is intended to be used for budget discussions only. This is a rough estimate and can vary by +/- 35%.

Several assumptions had to be made, without engineering reports to support the entered costs, and the best estimate has been entered based on experience with similar projects.



The following assumptions are made for the purposes of this estimate:

- No replacement of existing soil or significant import of compactable soil
- No environmental issues on site
- Sub-structure costs and timelines could be significantly impacted by poor soil conditions or the presence of contaminants.

3.10.2.7 Construction Estimate- List of Exclusions

The estimates stated above exclude the following:

- GST / Applicable Taxes
- Geotechnical, Surveys, etc.
- FF&E / OS&E
- Additional contingencies carried by The District.
- Offsite municipal improvements
- Any other costs that are not listed above.

3.10.2.8 Project Timeline Estimate

Table 14: Timeline Estimate for New Fire Hall

Project Phases/Milestones:		Time Estimate weeks	Time Estimate months
Pre-development Phase – 2 Months	Master Plan and discussion with Authorities - current	8	
	Program confirmation and engagement of other stakeholders		
	Phase 1 ESA specific to this project site		
	Site Survey		
	Servicing Study drawings completed		
	Any other required reports and assessments on provincial level must be completed as it may have impact on project timeline.		
Schematic Design/Programming		8	
Design Development		8	
Development Permit Approval		8	
Contract/Building Permit Documents			
Building Permit Approval		16	
Building Permit Approval – 2 Months		8	
Tender Process – 1 Month		4	
Project Design Subtotal		52	13
Construction – Schedule by Contractor		72	18
Total estimated schedule to occupancy			
Note: This estimate can vary up to 24 weeks depending on approvals, construction, weather, and other unforeseen events		124	31

3.10.3 Training Facilities

PFRS has limited hands-on training capabilities at the existing fire hall with the exception of classroom-based training. Other hands-on training is also conducted at a Crown leased land facility located on Princeton Avenue. However, this facility has no water source and is limited to car fires and auto extrication.

As identified in recommendation #14, the District should consider procurement of an additional site to accommodate a satellite fire hall and enhanced outdoor training area.



3.11 Apparatus and Other Response Equipment

3.11.1 Apparatus and Light Duty Vehicles

Fire apparatus and light-duty vehicles are typically the largest asset expenditures for any fire department or service. Purchasing and managing these assets requires strong fiscal responsibility to endure public and council scrutiny. Currently, PFRS has a significant amount of money invested in vehicles and equipment.

The array of apparatus and equipment is deemed appropriate and adequate for the type of service the department provides and there are no foreseeable issues. The following tables summarize PFRS' current apparatus and light-duty equipment inventory.

Vehicle Description		
Unit Number:	378 (Tender 21)	
Year/Make:	1998 International	
Type:	Water Tender	
Pump Capacity:	500 US GPM	
Tank Capacity:	3000 US Gal	
Usage:	- Water Delivery - Wildfire Deployment	
Unit Number:	379 (Car 21)	
Year/Make:	2019 Dodge Ram 1500	
Type:	Pick-up	
Pump Capacity:	N/A	
Tank Capacity:	N/A	
Usage:	- Command Vehicle - Duty Chief Truck - FMR Response - Member usage for travel - Taskforce Leader/Div. Sup Deployment	
Unit Number:	380 (Engine21)	
Year/Make:	2003 ALF Metropolitan	
Type:	Custom Cab	
Pump Capacity:	Compressed Air Foam 1800 US GPM @ 150 psi 1261 US GPM @ 200 psi 901 US GPM @ 250 psi	
Tank Capacity:	500 US Gallons 2x 30 US Gallon Class A Foam	
Usage:	- First out for Rescue (Low to Steep, Motor Vehicle Accidents) - Second out for Structure Fires - Responds to out of area MVAs	

Vehicle Description		
Unit Number:	381 (Utility 21)	
Year/Make:	2007 Ford F-350	
Type:	Pick-up	
Pump Capacity:	68 US GPM @ 25 PSI 42 US GPM @ 50 PSI 12 US GPM @ 75 PSI	
Tank Capacity:	120 Us Gallons	
Usage:	- Duty Officer Vehicle - First Out for Medical Response - Structure Protection Deployment - Initial Wildfire quick response - Misc. use (light duty)	
Unit Number:	382 (Squad 21)	
Year/Make:	2008 GMC 5500	
Type:	Bush Truck	
Pump Capacity:	Compressed Air Foam 251 US GPM @ 145 psi 176 US GPM @ 195 psi 126 US GPM @ 246 psi	
Tank Capacity:	240 US Gallons 10 US Gal Class A Foam	
Usage:	- First out for bush/grass fires - Wildfire deployment	
Unit Number:	384 (Pumper 21)	
Year/Make:	2019 E-One	
Type:	Custom Cab	
Pump Capacity:	Foam Induction 1599 US GPM @ 152 psi 1599 US GPM @ 175 psi 1112 US GPM @ 200 psi 801 US GPM @ 242 psi	
Tank Capacity:	770 US Gal 30 US Gal Class A Foam	
Usage:	- First out for structure fires - Second out for medical	

Vehicle Description		
Unit Number:	383 (SPU 21)	
Year/Make:	2013 Type III SPU	
Type:	10' Trailer	
Pump Capacity:	N/A	
Tank Capacity:	N/A	
Usage:	Structure Protection	
Unit Number:	N/A (Coast Guard Trailer)	
Year/Make:	2020 Trailer	
Type:	Coast Guard Owned Trailer	
Pump Capacity:	N/A	
Tank Capacity:	N/A	
Usage:	- Maine Spill Response on behalf of Canadian Coast Guard	
Unit Number:	N/A (Regional Rescue Boat)	
Year/Make:	2014 Kantar Marine	
Type:	Regional Rescue Owned 26' Ridged Hull Inflatable Boat	
Pump Capacity:	N/A	
Tank Capacity:	N/A	
Usage:	- First out for marine rescue from Galetly Bay to North Okanagan Campground. - Support other marine rescue on Okanagan lake	

Vehicle Description		
Unit Number:	N/A (Hose Cart)	
Year/Make:	2009 Restored	
Type:	Hose Cart	
Pump Capacity:	N/A	
Tank Capacity:	N/A	
Usage:	- Display - Parades	
Unit Number:	45 (Car ½)	
Year/Make:	1945 Dodge Truck	
Type:	Parade Truck	
Pump Capacity:	N/A	
Tank Capacity:	N/A	
Usage:	- Parades - Pub Ed	

The lifespan of apparatus varies depending on its type and use. Some fire departments typically designate a lifecycle to each piece of apparatus and contribute to a reserve fund to ensure enough funds are available when the replacement is needed.

Note: The lifecycle and replacement of each unit is based on information provided at time of this report relating to PFRS' apparatus and light duty life expectancy and replacement plan.

3.11.2 Fire Apparatus Replacement and Dispersal

The process of determining the appropriate dollar value required to be placed in a council approved reserve fund to ensure sufficient monies are available at the time of replacement is based on life cycle, forecasted inflation and depreciation. Calculating the yearly contributions is based on the number of years of expected life in the fleet inventory.

Although both NFPA and FUS have criteria on re-classifying or retiring apparatus, modifications or upgrades may be required based on age or heavy usage. For example,

- Engines: 16-20 years frontline (FUS & NFPA), but can be reduced due to high usage
- Rescue Truck: 15 years frontline (NFPA) but can be reduced due to high usage
- Water Tenders: 16-20 years frontline (NFPA) but can reduced due to high usage

Replacement lifecycles for PFRS vehicles are somewhat consistent with lifecycles recommended by the Fire Underwriter's Survey (FUS) body reporting to the Canadian General

Insurance (CGI). In addition to maintenance of a current fleet capable of reliably providing service, meeting insurance guidelines favourably impacts municipal insurance ratings.

Table 15: PFRS Fleet Service Life (the following units are owned and maintained by Peachland)

Unit Name	Year	Estimated year replacement	Estimated life expectancy
378 (Tender 21)	1998	2028	2023 (based on NFPA & FUS)
379 (Car 21)	2019	N/A (based on operable condition)	2034
380 (Engine21)	2003	2033	2028 (based on FUS)
381 (Utility 21)	2007	N/A (based on operable condition)	2022
382 (Squad 21)	2008	2038	2033 (based on FUS)
384 (Pumper 21)	2019	2039	2039 (based on NFPA & FUS)
383 (SPU 21) Trailer	2013	N/A (based on operable condition)	N/A

3.11.2.1 NFPA Standards for Fire Apparatus

NFPA has developed standards to assist a fire service with the design, maintenance, inspection, testing, life cycling, and dispersal for their fire apparatus. Fire departments may choose to adopt these standards or utilize them as a reference in their own standards and practices.

NFPA 1901: Standard for Automotive Fire Apparatus

The NFPA 1901 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 hazardous conditions. This standard recommends that fire apparatus should respond to first alarms for the first 15 years of service, with the expectation that they perform as designed 95% of the time. For the next five years, it should be held in reserve for use at large fires or used as a temporary replacement for out-of-service first line apparatus.

NFPA 1911: Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Emergency Vehicles

The NFPA 1911 standard defines the minimum requirements for establishing an inspection, maintenance, and testing program. Also included are guidelines for emergency vehicle refurbishment and retirement.

ULC: Utilizes many of the provisions within these standards as part of the Underwriters survey for determining fire insurance ratings for a community. For example it follows the life cycle program with the exception that it may award full credit for a fire apparatus older than 15 years, but not more than 20 years, in remote locations only if the piece of equipment is deemed in excellent condition and all necessary upgrades are done. The



value of the additional credit in this case which is only a portion of the total grading for a final FUS rating may well be overshadowed by the cost of maintaining an older unit.

In addition, the National Fire Protection Association Standard (NFPA) 1901: Standard for Automotive Fire Apparatus recommends the following:

D.1 General

To maximize fire fighter capabilities and minimize risk of injuries, it is important that fire apparatuses be equipped with the latest safety features and operating capabilities.

In the last 10 to 15 years, much progress has been made in upgrading functional capabilities and improving the safety features of fire apparatus. Apparatuses more than 15 years old might include only a few of the safety upgrades required by the recent editions of the NFPA fire department apparatus standards or the equivalent Underwriters Laboratories of Canada (ULC) standards. Because the changes, upgrades, and fine tuning to NFPA 1901 have been truly significant, especially in the area of safety, fire departments should seriously consider the value (or risk) to fire fighters of keeping fire apparatus more than 15 years old in first-line service. It is recommended that apparatus more than 15 years old that have been properly maintained and that are still in serviceable condition be placed in reserve status; be upgraded in accordance with NFPA 1912; and incorporate as many features as possible of the current fire apparatus standard (See Section D3 of Standard). This will ensure that, while the apparatus might not totally comply with the current editions of the automotive fire apparatus standards, many of the improvements and upgrades required by the current editions of the standards are available to the fire fighters who use the apparatus. Apparatuses that were not manufactured to the applicable NFPA fire apparatus standards or that are over 25 years old should be replaced.

Underwriters Laboratories of Canada

Current Underwriters Laboratories of Canada (ULC⁵) and NFPA 1901: Standard for Automobile Firefighting Apparatus Standards recommend using apparatus on the front line for up to 15 years, then as a backup for another 4-5 years. Of course, this timeline is dependent on the frequency of use, scheduled maintenance, and budgets. As indicated in Table 16, some emergency vehicles life cycles can be extended due to low usage or serviceable condition. A leading practice is to have a complete condition survey conducted to determine if there is usable life cycle remaining. This condition survey must consider the NPFA and FUS standards along with the maintenance and cost records of the respective vehicle.

⁵ Underwriters Laboratories of Canada (ULC) is an independent product safety testing, certification, and inspection organization. www.canada.ul.com

Table 16: Fire Apparatus Service Schedule (Fire Insurance Grading)

Apparatus Age (Yrs.)	Small Communities ⁵ and Rural Centres
0 – 15	First Line Duty
16-20	First Line Duty
20-25 ¹	No Credit in Grading or 2 nd Line Duty ²
26-29 ¹	No Credit in Grading or Reserve ²
30+	No Credit in Grading
¹ All listed fire apparatus 20 years of age and older are required to be service tested by recognized testing agency on an annual basis to be eligible for grading recognition (NFPA 1071).	
² Exceptions to age status may be considered in a small to medium sized communities and rural centres conditionally, when apparatus condition is acceptable, and apparatus successfully passes required testing.	
⁵ Small Communities are defined as an incorporated or unincorporated community that has: - no populated areas with densities that exceed 200 people per square kilometer; AND - does not have a total population more than 1,000.	

3.11.3 Fire Apparatus Design and Procurement

Fire apparatus are designed and tendered based on the unique requirements of the fire service and the community needs that it serves. With the design, tender and procurement processes typically taking 2 – 3 years or longer as well as with the expected life cycles of these apparatus of 20 years or more, it is important that the initial decisions accurately reflect the immediate needs and those in the future.

3.11.4 Vehicle and Equipment Maintenance and Replacement

All commercial vehicles operating on British Columbia highways, including firefighting vehicles registered for 11,794 kg or more must meet certain legislated and regulatory requirements regarding vehicle maintenance and record keeping and are required to be compliant with all the rules and regulations as contained in the Province of BC Traffic Safety Act – Commercial Vehicle Safety Regulation. Maintenance and inspection programs under the Act must be in writing and provide a continuous and regular program for the inspection, maintenance, and repair.

The PFRS firefighters who responded to a recent survey for this report gave the vehicle fleet a 3.3 out of 5 rating and the maintenance a 4.1 out of 5. Most survey comments about the fleet and maintenance were positive with the exception of Utility 21 which some firefighters feel needs to be replaced, as it is less than mechanically reliable.

Having well maintained fire apparatus and equipment is paramount in providing emergency response and comprehensive documentation of repairs and maintenance is critical. In an emergency, there is no time to waste on vehicles and tools that won't perform. The District of Peachland has a qualified mechanic to perform routine maintenance and commercial

vehicle inspections on the fire apparatus and repairs all small equipment such as generators and saws. The fire chief contracts and arranges specialized maintenance such as annual pump testing out to a third-party emergency vehicle technician service. One of the PFRS captains is in charge of the small motors and hand tool equipment. He ensures all small equipment is operating effectively and will take equipment out of service when repairs are required.

It is imperative that public organizations have responsible fiscal planning for the future including the replacement of capital assets in order to maintain a high level of service. Part of that planning involves implementing manufacturer expiry/ life cycle and industry standard recommendations as well as the extensive financial planning to meet the capital plans objectives.

Observation #16: The District of Peachland has a basic capital replacement schedule for fire apparatus and higher cost ancillary equipment. The fire chief has an internal plan to build reserves to replace the self-contained breathing apparatus (SCBA), Engine 21 and Tender 21. Most other equipment has a more flexible replacement date based on opportunity, funding and maintenance costs.

Recommendation #16: Identify life span of each apparatus and create replacement schedule and cost structure

(Suggested completion: 12-24 months)

It is recommended that the fire chief, in collaboration with the director of finance, identify the more costly ancillary equipment that must be planned for replacement and identify the life span for each fire apparatus and create a formal schedule and cost structure to meet the capital asset replacement needs of the PFRS. This plan should be updated annually with updated replacement costs of equipment so the annual contribution to the reserve can be maintained.

Rationale: *With comprehensive planning for future capital expenditures, the fire department and community will be better prepared as the PFRS equipment ages.*

Observation #17: Request for apparatus maintenance is typically made by phone call or text to the mechanic and follow up on status of work is done informally. For liability purposes all vehicle inspections, maintenance and repair of emergency vehicles should be well documented. It should be possible to extract all maintenance, repairs and inspections for each individual fire department vehicle.

Recommendation #17: Adopt an electronic method of documenting vehicle service maintenance (requests, status or work and completion of work)

(Suggested completion: 12-24 months)

It is recommended that the PFRS and vehicle maintenance department adopt an electronic method of documenting service requests, status of work and completion of work. This electronic maintenance should be available for the fire chief to review when needed or a reoccurring scheduled meeting or phone call should take place to keep the fire chief informed on status and priorities of all work requests. All hardcopies of pre-trip/ post-trip vehicle inspections conducted by qualified PFRS staff should be kept for a minimum of a year or scanned to electronic files.

Rationale: *There is a legal obligation to document particular fire apparatus service and maintenance and having an electronic system to manage and schedule this work and documentation will be easier for staff and ensure that records are consistent and complete. With granted access to the software system, the fire chief is able to monitor the status of the PFRS fleet without having to get updates from the maintenance staff.*

3.12 Ancillary Equipment

Equipment needed for field response operations such as vehicle extrication tools, hand tools and blowers are current and appropriate for the needs of PFRS. The ancillary equipment is designed and maintained to meet the department's current core services, goals and objectives. As the response needs change or grow, additional equipment to match the service must be considered.

3.13 Personal Protective Equipment

PFRS personnel are supplied with the latest NFPA, NIOSH and CSA approved personal protective equipment including turnout (bunker gear), gloves, helmets, boots and any specialized gear for specific rescue and emergency medical service operations. The personal protective equipment provided is current, appropriate, and designed to meet the department's safety goals and objectives. Breathing apparatus has been targeted for replacement in 2023.

3.14 Specialized Operations Equipment

In some cases an effective and efficient response to an incident requires equipment designed for a specific purpose. PFRS responds with specialized equipment to incidents involving motor vehicles, technical rope rescue, and water rescue. The equipment PFRS has meets the goals and objectives of the department and requires no further attention at this this time.

3.15 Municipal Comparative Analysis

Comparing the Peachland Fire and Rescue Service to that of similar communities is a good way to identify benchmarks or trends. It must be noted that all communities have different attributes such as risk factors and community profile. For this reason, the comparative community analysis

should be used as a base reference that is not intended to be replicated in Peachland. These benchmarks include budgets, performance, effectiveness and efficiencies.

For the purposes of this municipal comparator review, we used 2015–2019 information in order to get common information from each community. Data and statistics for 2020 were not used for this report as the COVID-19 Pandemic had varied effects to budgets and response protocols. Although fire and emergency services ultimately have the same goal of protecting life and property, each community has its unique features in how to accomplish their goals. Therefore obviously, there are no ideal or identical comparators for the District of Peachland. Our main criteria for collecting information were:

- Population
- Budgets
- Department Size
- Type (Fulltime, Part-time or Combination)
- Department Staffing

Additional information for evaluation was:

- Number of Fire halls
- Call Volume
- Call Types

Table 17: Participating Municipal Comparatives

Community	Province	Population	Jurisdiction Land Area (km ²)
Peachland	BC	5,428	16
Creston	BC	5,351	8.47
Metchosin	BC	5,000	72
Armstrong	BC	5,200	5
Hope	BC	6,450	40
Osoyoos	BC	5,085*	9*

* Does not include rural fire protection area for population or km².

Otherwise it would be 7,140 people and 392.96 km²

* Armstrong does not include the population or km² for Spallumcheen otherwise it would be 10,200 and 261 km²



3.15.1 Department Profile

Department profile, staffing models and levels of service are based on community risk, risk tolerance and the ability for a community to pay for and sustain desired service levels.

Table 18: Municipal Comparative Departments' Profile

Community	Department Type	No. of Fire halls	Total Staff	Fire Chief	Deputy or Asst. Chief	Fire Prev. /FF	Fire Inspector	Public Ed./ FF	Training Officer	Admin. Support Staff	Firefighters
Peachland	POC	1	38	1 FT	1 POC					1FT	35 POC
Creston	POC	2	42	1 FT	1 FT					1 FT	39 POC
Metchosin	POC	1	45	1 FT				3*			1 FT 40 POC
Armstrong	POC	1	35	1 FT	1 FT	1 FT					31 POC
Hope	POC	3	21	1 FT							20 POC
Osoyoos	POC	2	33	1 FT	2 FT						30 POC

FT: Full-time PT: Part-time POC: Paid-On-Call

Note: * Metchosin has 3 FT Public Works staff that are trained firefighters who respond to all incidents

3.15.2 Budgets

Department budgets are of specific concern to most communities. In some instances, budgeting for fire and emergency services make up a considerable portion of a community's operating budget. We evaluated the budgets for each community, and it is important to note that each is unique in how each municipality allocates their budgets.

Based on this analysis, PFRS is the mid-range for operating budget and cost per capita (including Osoyoos 2020). The PFRS percentage of municipal budget is the 4th highest amongst the comparative communities and as previously indicated, each municipality has its unique financial system and structure and therefore a direct comparison is not recommended

Table 19: Community Comparative Budget Ranking

Community	Province	Municipal Budget	Department Operating Budget	Cost per capita	Percentage of Municipal Budget
Peachland	BC	\$12M	\$531,938	\$97.99	5.9%
Creston	BC	\$11.2M	\$895,702	\$167.38	7.9%
Metchosin	BC	\$5.48M	\$570,000	\$114.00	10.4%
Armstrong	BC	\$6.6M	\$446,000 ((\$955,000))	\$85.76	City 45.6% Township 54.40%
Hope	BC	\$8.39M	\$365,300	\$56.64	4.4%
Osoyoos	BC	\$17.5M	\$478,405*	\$94.08	4.14%

* Analysis is based upon 2019 data from the respective community

* Osoyoos hired two fulltime deputies in 2020 that are not included in the operating budget data for 2019 and is estimated to be \$727,312 and \$143 per capita, in 2020

* Armstrong portion of the operational budget is \$446,000 and Spallumcheen portion is \$509,000 for a total FD budget of \$955,000

3.15.3 Response Data

For the purposes of this municipal comparator analysis, we used 2015–2019 information in order to get common information from each community. Breakdowns are divided into the two following categories:

Table 20: Examples of Incident Types for Statistical Analysis

INCIDENTS BY TYPE		
Emergency Medical Service-Related Calls		
Call Types	Pre-Hospital Care: Alfa, Bravo Charlie Delta Echo	
	Lift Assist	
	False Alarms	
Fire Related Calls		
Fire Emergency	Alarm Burning Complaint Structure Fire Minor Fire Smoke	Car Fire Re-check Wildfire – Grass, Brush, Outdoor Oven/Pot on Stove Explosion
MVI (Motor Vehicle Incident, a.k.a. MVC (Motor Vehicle Collision))	Extrication	No Extrication
Rescue	Stalled Elevator Lake/Marine Rescue High Angle	Swift Water Building Collapse Ice
Hazmat/Dangerous Good	Highway Incident Rail Incident	Industrial Incident Resident Incident
Non-Emergency	Carbon Monoxide Gas/Oil Smell/Spill Power/Telephone/Cable Line Down Natural Gas Leak	Aircraft Standby Incident Bomb Threat Hazardous Materials Propane Leak/Smell
Other	Inspection Burning Pile Inspection Assist Other Agency Public Service	Needle Pick-up Flood Assessment Water Problem (in structure)

Note: Description and category names may not be common terminology in all jurisdictions.



Table 21: Municipal Comparative Response Call Volume

Community		Peachland	Creston	Metchosin	Armstrong	Hope	Osoyoos
Total Call Volume	2015	361	549	435	193	317	205
	2016	370	508	459	256	302	164
	2017	414	660	462	345	366	193
	2018	344	530	479	236	313	190
	2019	380	438	572	314	499	206
Fire/ Rescue/ MVC Related Calls	2015	172	187	192	89	20	205
	2016	172	161	216	104	14	164
	2017	175	188	213	155	25	149
	2018	171	184	277	105	15	138
	2019	190	203	312	138	72	153
Emergency Medical Service- Related Calls	2015	177	348	133	18	23	No Stats
	2016	190	331	128	62	46	No Stats
	2017	218	434	148	66	43	24
	2018	165	312	127	50	44	21
	2019	181	222	164	60	38	30
Other	2015	12	14	92	47	147	No Stats
	2016	8	16	102	43	126	No Stats
	2017	21	38	86	73	139	20
	2018	8	34	64	38	132	31
	2019	9	13	83	55	128	23



There is no standard for categorizing incidents so it must be understood that statistics are only general reference when comparing fire departments.

Peachland Fire and Rescue Service with a 5-year average of 374 responses is higher than the average of surveyed fire departments at 369. This includes higher 5-year average for fire calls where Peachland averaged 176 to the surveyed average of 152 and medical related calls where Peachland's 5-year average was 186 to the surveyed average of 128.

SECTION 4

RESPONSE STATISTICS AND PERFORMANCE STANDARDS

4.1 Response and Service Categories

Response and service categories provide a method of capturing the diverse types of emergencies and service type responses requested of the fire service. These response/service categories, if too broad, make it difficult for the fire chief to determine trends or evaluate risks. On the other hand, if incident types are not grouped into like response type categories, it is difficult to analyze the volumes and performance data of each response type. These response/service categories can be further broken down to identify specific call types which would assist in identifying trends and risks. For example, the fire suppression category encompasses all types of fire related responses. If this category is further expanded to identify responses such as kitchen or stovetop fires, chimney fires and minor fires (i.e. dumpster fires), the fire chief could develop specific prevention programs that target the recurring types such as cooking safety or promote chimney cleaning and maintenance as part of the public education program.

Capturing accurate time stamps for each response is a necessity to allow for the fire chief to analyze the actual performance criteria against required standards, whether those by NFPA or those set by the jurisdiction in their SOC or similar approved document. It is common practice to capture important benchmarks achieved on the fire scene as well as other emergency scenes. PFRS dispatch services are provided through the Kelowna Fire Department Dispatch Centre utilizing the Priority Dispatch System, identifying specific protocol determinants for each type of emergency received. PFRS has access to extensive record of all activities, including emergency and non-emergency requests. Available information includes:

- Type of incident
- Time stamps within the incident
 - Dispatch receipt
 - Dispatch to Fire Service
 - Fire service turnout time
 - Enroute time
 - Time on scene
 - Incident concluded time
- Number of personnel responding/on-scene
- Time of day
- Day of week
- Cancelled in station or enroute
- Inspections
- Fire investigations



This available data allows PFRS administration to review their performance against set objectives. Historical call response statistics were provided for the periods 2016-2021 for evaluation.

Table 22: Summary of Incident Call Types and Frequency by Station (2016-2021)

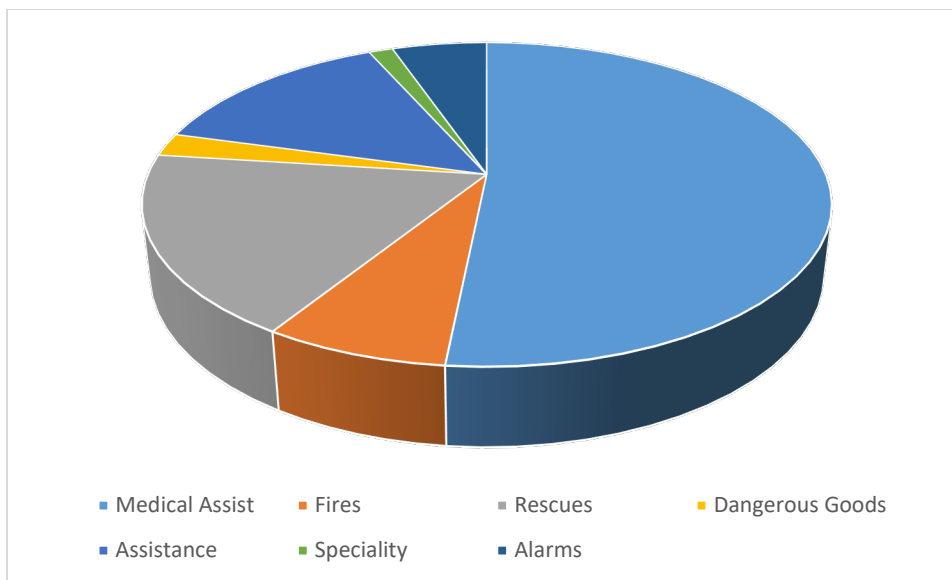
Call Type	2016	2017	2018	2019	2020	2021	Total
Medical Assist	170	197	146	159	71	65	808
Alarm	19	20	5	7	24	8	83
Boat Fire	0	0	0	0	1	0	1
Car Fire	1	5	8	1	4	0	19
Chimney Fire	0	0	2	0	0	0	2
Fire	12	0	0	0	0	0	12
Minor Fire	2	1	2	7	0	1	13
Oven/Pot-on-stove	0	0	0	1	0	1	2
Structure Fire	3	7	4	9	1	0	24
Wildfire	5	9	14	9	3	2	42
Carbon Monoxide	6	2	4	4	3	0	19
Gas/Oil Spill	3	0	3	1	0	0	7
Natural Gas	0	0	2	4	1	2	9
Propane Leak	0	0	0	0	1	0	1
Aircraft	0	0	0	1	0	0	1
Powerline Down	1	6	3	6	4	0	20
Elevator Rescue	0	0	0	1	0	0	1
Marine Rescue	19	13	13	8	4	3	60
MVA/Extrication	46	46	33	48	41	5	219
Rescue/Hi Angle	0	0	0	0	1	1	2
Rescue - Locked In	0	0	1	0	0	0	1
Flood	0	0	3	1	0	0	4
Needle Pick-up	1	1	0	1	0	1	4
Public Service	5	12	4	5	7	1	34
Public Hazard	2	0	1	0	0	0	3
Re-check	1	2	0	5	0	0	8
Smoke	5	4	9	10	7	2	37
Assist other Agencies	7	5	13	19	16	6	66
Burning Complaint	5	14	15	10	19	1	64
No Response	3	0	0	1	1	0	5
Total	316	344	285	318	209	99	1571



Table 23: Summary of Broad Incident Call Types and Frequency (2016-2021)

Broad Call Types	6 Year Average
Medical Assist	808
Fires	115
Rescues	283
Dangerous Goods	36
Assistance	220
Specialty	21
Alarms	83

Pie Chart 2: Summary of Broad Incident Call Types and Frequency (2016-2021)



Observation #18: PFRS relies on Kelowna Fire Department Dispatch Centre (KFD) to provide statistical data on their responses. There were challenges in obtaining the necessary 6-year PFRS response data that could be analysed. Working closely with the software vendor, this information was able to be generated. The response data should be developed into recurring reports that monitor the recommended service levels approved by Council in the SOC and should be shared with stakeholders and PFRS staff going forward.

Recommendation #18: Obtain, analyse and report PFRS incident call data

(Suggested completion: 0-12 months)

It is recommended that PFRS administration develop a process with the software vendor to recurring reports of incident response data and analyzed against the approved service levels.

Rationale: *Established service delivery standards as recommended in the SOC provides the fire chief with the opportunity to monitor response data, adjust when necessary, and the accountability method to advise Council on the PFRS performance.*

4.2 Industry Standards

4.2.1 National Fire Protection Association (NFPA)

The most widely accepted standards for the fire service are developed by the NFPA. Several decades of research have resulted in the NFPA establishing industry benchmarks for operation and firefighter safety. The use of industry standards, such as those offered by the NFPA, does not limit a local government's flexibility to develop levels of service based upon local conditions, risks, and economic realities.

NFPA has done considerable research in developing the recommended standards and ensuring they reflect the primary value of life-safety in emergency response. The NFPA's Standard 1720: Organization and Deployment of Fire Suppression Operations, Emergency Medical Service Operations, and Special Operations to the Public by Volunteer Fire Departments, provide clear performance standards for departments to ensure effective measurement and reporting of activities.

Alternatively, most Canadian municipalities choose to develop a performance standard based on their specific risk factors, organizational capacity, and economic conditions. In this case, the responsibility to understand community expectations and to determine an appropriate level of investment in fire service rests with community leadership, Mayors, and Council. There is no regulatory or other obligation for a municipality to comply with NFPA.

The NFPA sets standards for intervention time, and although these are not requirements, they are widely accepted as industry leading practices. They therefore provide a good standard by which departments can measure their performance and set targets. NFPA's Standard 1720 provide a basis to evaluate the service effectiveness. Table 24 contains an excerpt from NFPA Standard 1720 that identifies the recommended minimum staff to

respond (Effective Response Force or ERF), and response time based on demand zone (fire protection area) and demographics.

To comply with NFPA 1720, this table may be used by the authority having jurisdiction (AHJ) to determine staffing and response time objectives for structural firefighting, based on a low-hazard occupancy such as a 2000 ft² (186 m²), two-story, single-family home without basement and exposures and the percentage accomplishment of those objectives for reporting purposes as required. It is important to note that the application of NFPA 1720 includes medical first response and other specialized operations (response services) provided by volunteer/POC fire departments. The table below has been extrapolated to include “all calls for service”.

Table 24: Standard for the Organization and Deployment of Fire Suppression Operations⁶

Demand Zone	Demographics	Minimum Staff to Respond	Response Time (minutes)	Meets Objective (%)
Urban area	>385 people/km ²	15	9	90
Suburban area	190–385 people/km ²	10	10	80
Rural area	<190 people/km ²	6	14	80
Remote area	Travel distance ≥ 13km	4	Directly dependent on travel distance	
Special risks	Determined by AHJ	Determined by AHJ based on risk	Determined by AHJ	

- A jurisdiction can have more than one demand zone
- Minimum staffing includes members responding from the AHJs department and automatic aid
- Response time begins upon completion of the dispatch notification and ends at the time interval shown in the table

Table 24 above also identifies the percentile objective for volunteer services to meet the recommended standards. In the case of suburban areas, the objective would be to respond to all calls for service in 80% of the time within 10 minutes. Based upon NFPA 1720 in Table 26, BEHR is recommending that Peachland be categorized as a suburban area with a recommended response/travel time of 10 minutes from notification with a minimum of 10 firefighters in 80% of all responses within their response boundaries.

⁶ NFPA, 2020. Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments. As retrieved from <https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1720>

4.2.2 Intervention Time

Intervention time is defined as the time between the fire department receiving notification of an emergency and commencing assistance at the scene of the emergency. Increased intervention time can have two important impacts on a landowner:

- Decreased survivability for trapped victims
- Increased loss in the event of an emergency
- Building design restrictions
- Higher property insurance premiums

Table 25: Intervention Time Defined

Intervention Time Suburban: Population 190–385 people/km ²					
		Time Values			
Notification		Intervention Time			
Discovery	Emergency Call	En Route Time			Set-up
		Dispatch Time (Call Handling)	Turnout or Chute Time	Travel Time	
Time Unknown		Not Included	Included	600 sec @ 80%	May vary by event
			Min. Staffing		
			10		
Time indirectly manageable		Time directly manageable			
		Reflex time			

Note: Response time begins upon completion of the dispatch notification and ends at the time interval shown in the table.

Upon assembling the necessary resources at the emergency scene, the fire department shall have the capability to safely commence an initial attack within 2 minutes 90 percent of the time.

Discovery: This is the time between the start of the emergency and when a person or an engineered system has detected the incident.

Emergency Call: This is the period between discovery and the actual notification of emergency services. The initial call is usually taken at the E 911 (Public Safety Answering Point). In Peachland the ECOMMs 911 service transfers the call dispatching to KFD Fire Dispatch.

Dispatch Time/Notification: This is the time required to extract the necessary information from the caller to allow the proper response to be initiated. The dispatcher identifies the correct fire location and initiates the dispatch by paging PFRS members.

Turnout or Chute: This is the time from when dispatch notifies the firefighters by pager until the first vehicle leaves the fire hall and arrives on scene. NFPA 1720 establishes that response



time begins upon completion of the dispatch notification and ends at the time interval shown in Table 25 and when the assigned vehicle arrives on scene.

Note: Peachland population density would be categorized as suburban which recommends a minimum of 10 firefighters arriving within 10 minutes in 80 percent of all calls for service.

Travel Time: This time begins upon leaving the fire hall or otherwise begins the response to the scene of the emergency and ends at the time when the first assigned vehicle arrives on scene. *Once a vehicle leaves the fire hall, it must negotiate the best route between that point and the location of the emergency.* Factors to consider for travel time are weather, traffic, topography, road conditions, vehicle capabilities and driver skill.

Setup Time: This is the time it takes (on site) to evaluate the necessary actions, position the required resources, and commence the intervention. In the case of a fire, completing size-up, assigning the necessary tasks, and deploying resources can provide delays on scene. A well-trained crew can minimize these delays while providing a safe, successful response. The recommended standard for this increment is two minutes.

There are two variable portions of the total intervention time for POC service models. The first being the assembly or muster time. The availability of firefighters to respond is variable depending upon the time of day, month, year etc. as well as their location in relation to the fire hall. The second variable is the response travel time, which is primarily a function of the distance from the fire hall to the incident, but is also influenced by several other factors, including but not limited to:

- Size of the response zone
- Distance to the emergency
- Layout and footprint of the community (route widths and alternatives)
- Impediments, such as weather or time of day (traffic jam)
- Transportation system (including roadways, bridges, underpasses, overpasses, railway, major highways, construction road surface, detours, etc.)
- The number of available on-duty firefighters and location from incident

Note: It is important to note that the response time statistics are 6-year averages from the data provided. Responses from chief officers or others that do not consist of a 4-person crew are not included. As well incidents that had excessive response times as a result of delays out of the control of the PFRS were also excluded.

4.2.3 Effective Response Force (ERF)

In addition to the call volume statistics for PFRS, an analysis of the ERF was conducted. The initial response to an incident is currently averaging 9-10 firefighters. PFRS often send the fire chief on the initial response, that is followed by the appropriate response vehicle and firefighters based on the nature of the incident... This was done to achieve a properly staffed company of a minimum of four firefighters (including a qualified officer and qualified

operator). However, consideration should be taken for each type of call for optimal deployment of staff and apparatus utilizing a critical task analysis.

As previously indicated, NFPA 1720 recommends that volunteer/POC fire services strive to have an ERF of trained firefighters arriving on scene within the recommended time in the appropriate percentage of calls for service.

Based on the 2016 to 2021 data for responses were:

Table 26: Average Number of PFRS Firefighters who Respond on Receipt of a Call

2016	2017	2018	2019	2020	2021	6 Year Average
10	8	10	10	10	9	9.5

It is important to note that table 27 above is the average number of PFRS firefighters that responds to calls of service or the 50th percentile. Normal weekday work hours are a specific challenge for PFRS. This is ubiquitous for the majority of volunteer or paid on-call services. Recommendations contained in this report include the establishing a WEP, firefighter station days, and hiring a full-time assistant fire chief.

The following tables indicate the average response times that the first PFRS apparatus arrives on scene. This data is a culmination of all response types with considerable variations of times based on individual variables of each incident. The incident data capturing the 80th percentile provides the response capabilities based on the requirements of NFPA 1720.

Table 27: PFRS Average Initial Apparatus Response Time On-scene and Number of Firefighters - NFPA vs Actual by Station (2016-2021)

Peachland Suburban Area	Response Time (min.)		Firefighter On-scene	
	NFPA	Actual	NFPA	Actual
	10:00	12:17	10	9.5

Table 28: PFRS Response Performance (2016-2021)

Response	2016	2017	2018	2019	2020	2021	Average
Turnout: Time	7:18	7:40	7:25	6:44	7:24	7:21	7:18
Travel Time	5:09	4:45	5:20	4:31	5:17	4:53	4:59
On-scene Time	12:27	12:25	12:45	11:16	12:41	12:13	12:17
80% Average to Arrive on Scene	14:40	14:57	14:41	13:15	14:35	14:19	14:24

Figure 3: Average PFRS Response Times by Year (2016-2021)

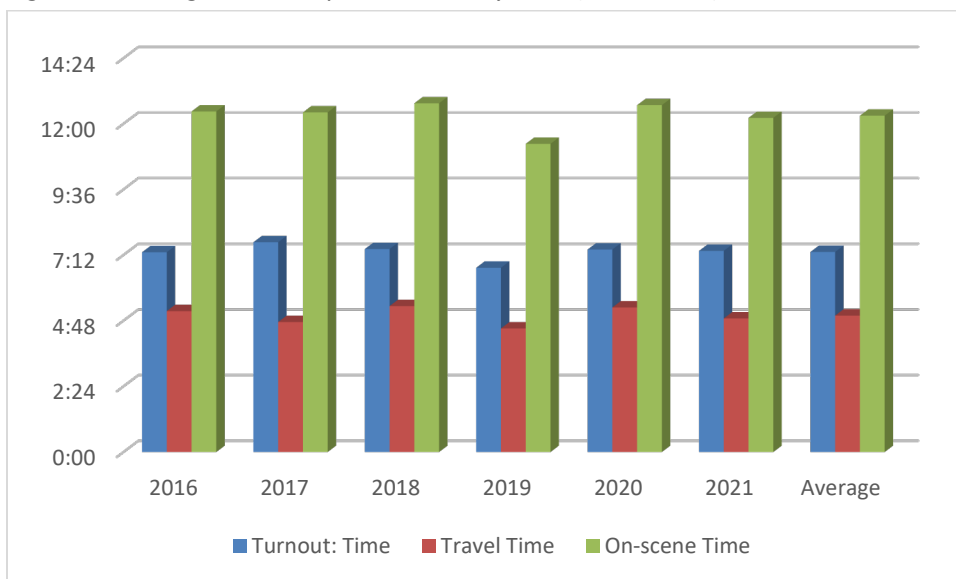


Table 29: Average PFRS Turn-out Times by Year (2015-2020)

Year	2016	2017	2018	2019	2020	2021	Average
Turnout Time	7:18	7:40	7:25	6:44	7:24	7:21	7:18

Figure 4: Average PFRS Turn-out Times by Year (2015-2020)

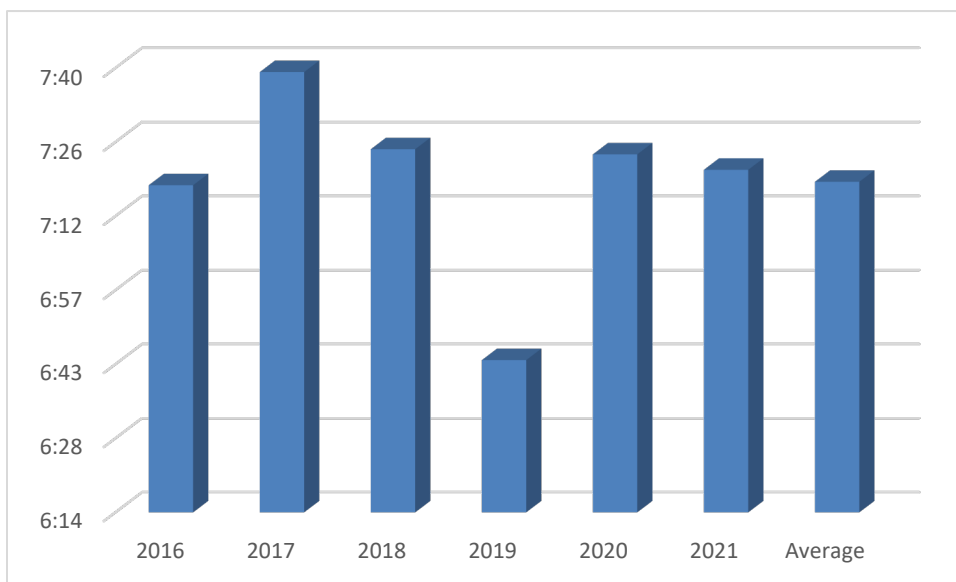


Table 30: Average PFRS Travel Times by Year (2015-2020)

Year	2016	2017	2018	2019	2020	2021	Average
Travel Time	5:09	4:45	5:20	4:31	5:17	4:53	4:59

Figure 5: Average PFRS Travel Times by Year (2015-2020)

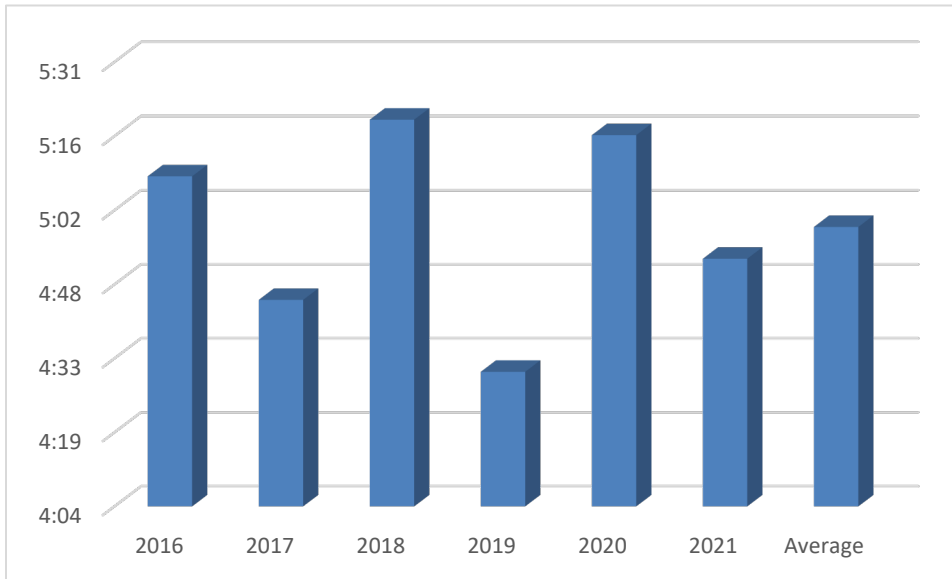


Table 31: First PFRS Apparatus On-scene Times by Year (2016-2021)

Year	2016	2017	2018	2019	2020	2021	Average
On-scene Time	12:27	12:25	12:45	11:16	12:41	12:13	12:17

Figure 6: First PFRS Apparatus On-scene Times by Year (2016-2021)

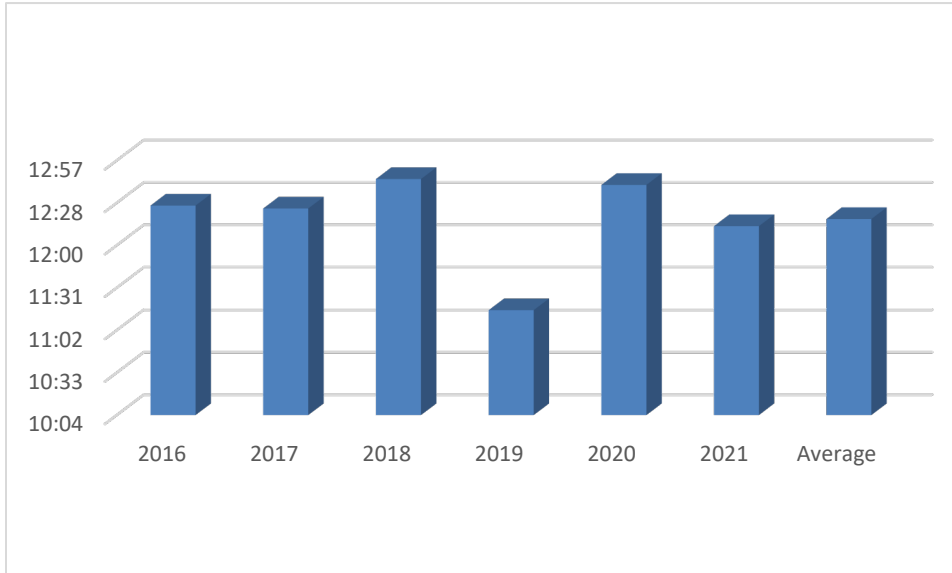
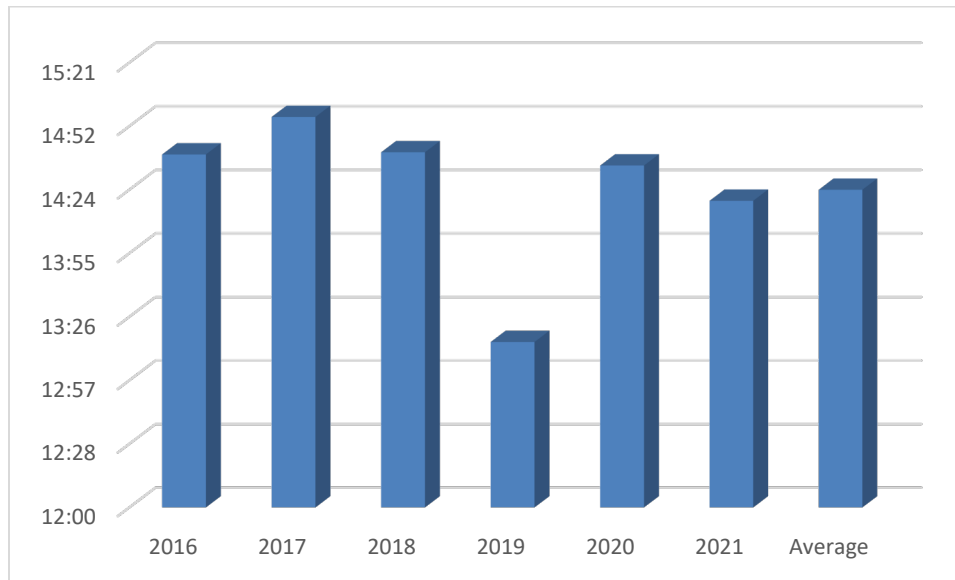


Table 32: First PFRS Apparatus 80% On-scene Times by Year (2016-2021) *NFPA 1720*

Year	2016	2017	2018	2019	2020	2021	Average
80% Average to Arrive on Scene	14:40	14:57	14:41	13:15	14:35	14:19	14:24

Figure 7: First PFRS Apparatus 80% On-scene Times by Year (2016-2021) *NFPA 1720*



While the response times for PFRS does not meet the recommended NFPA 1720 ERF, there are factors that are within the control of the District of Peachland and the fire service to improve upon. The actual travel distance is for the most part a static assessment based on the location of the fire hall and the distance of travel based on reasonable apparatus speeds and road conditions. There may be opportunity to strive for improvement in chute times. Particularly during the normal workday hours where POC firefighters may be pre-disposed. The most important priority is the safety of the firefighters and the community, whether responding to the fire hall, or responding to the scene of the emergency from the fire hall.

Observation #19: The PFRS has shown a reasonable response time for the 6-year period that was reviewed. It is difficult for a POC fire service to consistently meet the recommended NFPA 1720 response times; however it is a standard that should be strived for. Where opportunities are identified to improve response times, they should be pursued. Typical challenges for POC services are the lack of available staff to respond during normal workweek hours. Discussions with the Fire Chief indicates that this is a factor for PFRS.

Alternative strategies, particularly during normal daytime work hours, may significantly assist with decreasing the time to provide sufficient resources to the scene of an emergency. The feasibility of programs such as the work experience program (WEP, see appendix D) or establishing station days for PFRS staff should be explored. Station days are when firefighters on a day off can work in the station during workday hours. This includes a flat rate of compensation for the day with responsibilities such as basic maintenance and cleaning of equipment and vehicles, additional training, and other duties assigned by the fire chief. These programs along with the addition of the recommended assistant chief position would assist in ensuring sufficient firefighters are available for response during the normal workweek daytime hours that have proven to be an ongoing challenge for the PFRS.

Recommendation #19: Conduct a detailed analysis of the POC turnout times and if deemed appropriate explore possible initiatives enhance response times

(Suggested completion: 12-24 months)

It is recommended that the fire chief conducts a detailed analysis of turnout times based upon time of day, week, and month. Should the trend from this analysis indicate gaps during normal workweek hours the fire chief should then explore the WEP program and/or station days to address the lack of available PFRS staff during these periods.

Rationale: Lack of available POC staff during work-week hours could be offset with alternative programs such as WEP and station days.

4.2.4 British Columbia Fire Service Minimum Training Standard

The British Columbia Office of the Fire Commissioner by order of the BC Fire Services Act is required to establish the minimum standards of training required for fire service personnel in British Columbia. A comprehensive document developed through the Office of the Fire Commissioner titled “Structure Firefighters Competency and Training Playbook referred to as the ‘Playbook’ is applicable to all fire service personnel in British Columbia, excepting provincial Wildfire Management Branch resources.

It is the responsibility of each AHJ to select and declare its firefighting ‘service level’. The declared service level must be established as formal policy for the department and must be fully reflected in the fire departments operating guidelines and policies.

The Playbook establishes and describes the minimum competencies required of firefighter roles in the following three categories:

- Exterior Operations Level Firefighter
- Interior Operations Level Firefighter
- Full-Service Operations Level Firefighter

It is our understanding that Peachland Council has declared the Fire Department as an Exterior Operations Level Firefighter service. They however strive to provide interior Operations Level of service where safely able to do so.

Observation #20: PFRS has been declared an Exterior Operations Level Firefighter service by Council as required by the British Columbia Fire Commissioners Office. This category stipulates the minimum level of firefighter training and operational capabilities. Fire service SOP/SOG's are required to conform to the approved level of service. PFRS will provide interior operations where sufficient trained firefighters and equipment are available.

PFRS has SOPs and SOGs for most of their operations. Maintaining current SOGs/SOPs is a labour-intensive undertaking for most departments. Discussion with the PFRS Administration confirms the struggle with keeping these essential polies and guidelines current.

Recommendation #20: Establish an efficient process to review and updated SOGs and SOPs

(Suggested completion: 6-18 months)

It is recommended that the fire chief establishes a review updating procedure that maintains SOPs/SOGs up to date and includes an accountability process to ensure all staff review on a recurring basis to ensure understanding and compliance.

Rationale: *This is considered an essential requirement to comply with the current Occupational Health and Safety Guide for Firefighting.*

4.2.5 British Columbia Building Code Establishing Spatial Separation for Un-sprinklered Buildings

The BC Building Code has established criteria to establish spatial separation for Un-sprinklered buildings depending on the response time of a fire department. Where the response time (measured according to certain parameters within the BC Building Code) exceeds 10 minutes in 10% or more of the calls to the building, requirements related to limiting distance may be affected.

The intent behind these requirements is that when fire suppression staff cannot respond to a fire in less than a ten-minute total response time, buildings must be located farther away from the property line or provided with additional fire protection, such as non-combustible siding, no side-yard windows and sprinkler systems. Additional fire protection measures slow

the spread of fire by either containing it or suppressing it and giving the fire department additional time to arrive before the fire spreads out of control or becomes a high intensity residential fire.

The BC Building Code specifies a 10-minute total response time must be achieved for 90 percent of the incidents. The definition of 'total response time' is the time from when a fire department receives the notification of an emergency to the time when a fire department vehicle is capable of beginning fire suppression activities (typically a pumper truck with hoses and a crew) arrives at the scene of incident.

PFRS current response capability to a building or structure that requires a full response is averaging 729 seconds or 12 minutes and 9 seconds from notification by the KFD. Moreover, the current 80th percentile is 864 seconds or 14 minutes and 24 seconds. These response averages indicate that PFRS cannot meet the NFPA 1720 standards for suburban responses. As previously indicated, compliance with NFPA is not a requirement. Very few volunteer services in BC or Canada would meet these standards and the preferred approach is a community risk assessment and the development of a Standards of Cover (SOC) emergency response policy.

Observation #21: PFRS cannot meet the BCBC 10-minute total response time for 90 percent of the incidents. Where a fire department is unable to respond to a fire within 10 minutes more than 90% of the time, buildings must have greater protection from exposure fires. This can be achieved by two approaches. One approach is to increase the setbacks for new construction along adjacent property lines. Another approach is to reduce the likelihood of fire extension by improving the rated fire resistive design for exposed walls and unprotected openings, as well as the installation of residential sprinklers. This may have a direct impact on the Official Community Plan or new developments within the District of Peachland.

Recommendation #21: *Establish a policy for new developments that deems all areas beyond the 10 minutes 90th percentile*

(Suggested timeline: 0-6 months)

It is recommended that the District establish a policy for new developments that deems all areas beyond the 10-minute 90th percentile as required by the BCBC. This restriction should remain until such time as PFRS response times and staffing levels comply with the BCBC.

Rationale *The BC Building Code has established criteria to establish spatial separation for Un-sprinklered buildings depending on the response time of a fire department.*

The geographic information system response mapping at Section 47 provides additional spatial analysis on the current response capabilities of the PFRS.

4.3 Critical Task Analysis

The purpose for completing a critical task analysis is to consider whether the PFRS response policy and common risks are aligned. In other words, are enough firefighters typically responding on the proper apparatus to complete the critical tasks on an emergency scene in a safe and timely manner. Considerable research was undertaken by the National Institute of Standards and Technology (NIST) to identify the optimum number firefighters in a fire company necessary for the most effective completion of the over 22 essential fire ground tasks at a typical single-family house fire.

A fire company is defined as the team of firefighters assigned to a fire apparatus. A comprehensive report issued by the National Institute of Standards and Technology identifies the optimum number of members for a fire company necessary for the most effective completion of the over 22 essential fire ground tasks at a typical single-family house fire. On average, a four-member crew operating on a structure fire completed all the tasks on the fire ground seven minutes faster (nearly 30%) than the two-person crews. The four-person crews completed the same number of fire ground tasks 5.1 minutes faster on average (nearly 25%) than the three-person crews.

On the medium-hazard residential structure fire, adding a fifth person to the crews did not decrease fire ground task times for similar task assignments vs the 4-person crew. The addition of a fifth person is beneficial where limited firefighters are on the initial assignment and required for simultaneous tasks that are normally provided by a second company.

The need for sufficient trained firefighters is not limited to structure fires only, but rather many of the incidents that PFRS responds to may require additional staff to manage the incident safely and effectively.

Response policies and guidelines are based on optimum minimum numbers; in some responses the optimum numbers may not be available initially due to lack of trained or available responders. When this occurs, the contingency plan is call on mutual aid partners such as West Kelowna to safely conduct/complete the operation. The order in which an apparatus departs the fire hall is based upon the nature of the incident, available staffing, and qualifications of the firefighters.

Response policies and guidelines are based on optimum minimum numbers; in some responses the optimum numbers may not be available initially due to lack of trained responders. When this occurs, the fallback is to request mutual aid assistance to safely conduct/complete the operation. The order in which an apparatus departs the fire hall is based upon the nature of the incident, available staffing and qualifications of the firefighters.

Below is an example of resource requirements based on the hazard risk. It is acknowledged that PFRS does not necessarily have the same type of apparatus cited in the examples below, however where other apparatus is able to perform the necessary task assignments in a safe and timely manner is of importance.



Table 33: Low Risk (no exposures): garbage, vehicle – private, grass, Investigate (external), monitoring alarm (w/o confirmation)

Initial Deployment	No. FF	Task Assignment
Engine	4	Incident Command, safety, establish perimeter, pump operation, 2 FF with hand line, forcible entry, battery disconnect, product containment.
Total Personnel	4	

Table 34: Low Risk (no exposures): shed, detached garage

Initial Deployment	No. FF	Task Assignment
Engine	4	Incident Command, safety, establish perimeter, engine operation, 2 FF with hand line, forcible entry.
Ladder	4	Perimeter Control, safety, water supply, RIT.
Total Personnel	8	

Table 35: Moderate Risk (with exposures): grass/wildland

Initial Deployment	No. FF	Task Assignment
Bush Truck	4	Incident Command, safety, establish perimeter, engine operation, two FF with hand line, brooms.
Water Tender	2	Water Supply
Engine	4	Manpower for operations
Deputy or Fire Chief	1	Overall command based on incident size
Total Personnel	11	

*Table 36: Moderate Risk: Attached garage, single family residential (detached/duplex)*

Initial Deployment	No. FF	Task Assignment
Engine	4	Incident Command, safety, establishes perimeter, engine operation, forcible entry, search, and rescue and/or suppression.
Ladder	4	Ventilation, utilities, search, and rescue and/or suppression.
Rescue	4	
2 nd Engine	4	Water supply, laddering, RIT.
Deputy or Fire Chief	1	Overall Incident Command, safety, accountability, resource management.
Rapid Deployment Unit (RDU) & Pickup truck		Rehab, Command area, protection from elements
Total Personnel	17	

Table 37: High Risk: Commercial, industrial, strip mall, warehouse, mid-rise residential

Initial Deployment	No. FF	Task Assignment
Ladder	4	First Officer assumes Incident Command and forms attack team with second officer and four FF. Two driver/pump operators establish exterior water connections, water supply, pump operation.
Engine/3 rd Engine	6	Primary Search and Rescue
Rescue	4	
3 rd Engine	4	Exposure protection/RIT
Deputy and Fire Chief	1	Overall Incident Command, safety, accountability, resource management.
RDU & Pickup	2	Rehab, Command area, protection from elements
Total Personnel	21	

Table 38: Moderate Risk: FMR Emergency, vehicle vs. pedestrian

Initial Deployment	No. FF	Task Assignment
Rescue	4	Incident Command, safety, patient assessment, CPR, AED, oxygen, patient packaging
Engine	4	Traffic Management
Total Personnel	8	



Table 39: Moderate Risk: Motor vehicle crash (1-3 private vehicles)

Initial Deployment	No. FF	Task Assignment
Rescue	4	Incident command and size-up, safety, establish outer perimeter, pump operation, 2 FFs prepare hand line.
Engine	4	Establish inner perimeter, triage patients, patient care, extrication, patient packaging.
Tanker	2	
Total Personnel	10	

Table 40: Moderate Risk: Surface water, swift water or ice rescue, animal rescue

Initial Deployment	No. FF	Task Assignment
Engine	4	Officer of first engine on scene assumes command, size up, scene safety and communications. 1 FF victim contact. 2 FFs shore rescue if possible or Safety team for water rescue team activity.
Rescue	4	Officer of rescue team is the sector officer, supervise and safety. 3 FFs prepare equipment for rescue.
RDU & Pickup		Rapid Deployment Unit is equipped with power and heat and can be used for changing clothing, pet care etc. and general protection from the elements
Total Personnel	8	

Table 41: Low Risk: Carbon monoxide alarm, small spill cleanup, investigates smell, needle removal

Initial Deployment	No. FF	Task Assignment
Engine	4	Incident Command, scene safety, establishes isolation perimeter, air monitoring, ventilation, or cleanup.
Total Personnel	up to 4	

Table 42: Moderate Risk: Small quantity (<20 ℓ) of known product (gasoline, anti-freeze), open space natural gas smell or odor from unknown source

Initial Deployment	No. FF	Task Assignment
Rescue	4	Site management and control identify problem.
Engine	4	
Spill response Unit	2	• Hazard and risk evaluation • Selection of personal protective equipment • Information management and resource coordination • Implement response objectives • Decontamination and clean-up operations • Terminate the incident
Deputy or Fire Chief	1	Overall Incident Command, safety, accountability, resource management.
Total Personnel	11	

Table 43: Special Risk: Quantities (between 20 and 75 ℓ) of known product (gasoline, anti-freeze), natural gas leak, indoor natural gas smell or odor

Initial Deployment	No. FF	Task Assignment
Rescue	4	• Site management and control
Spill Response Unit	3	• Decontamination of FF personnel
Ladder	4	• Manpower and scene control • Safety and emergency decontamination
Dangerous Goods response from alternate agency		• Identify problem • Selection of personal protective equipment • Implement response objectives • Decontamination and clean-up operations • Terminate the incident
Deputy and Fire Chief	1	• Hazard and risk evaluation • Information management and resource coordination
Total Personnel	12	

Table 44: High Risk: Large quantity (>75 ℓ) of known product, known hazardous product, unknown substance, large exposure, or train derailment

Initial Deployment	No. FF	Task Assignment
Rescue	4	• Site management and control
Engine	4	
Hazardous Materials response from alternate agency	4	• Identify problem • Selection of personal protective equipment • Implement response objectives • Terminate the incident
Rescues, ladder, and tower	6	• Decontamination and clean-up operations
Deputy and Fire Chief	2	• Hazard and risk evaluation • Information management and resource coordination
RDU & Pickup truck		• Rehab, Command area, protection from the elements
Total Personnel	+20	

Notes: Coincidental and sequential calls for service occur often. In this case decisions are made based on risk and need.

4.4 Standard of Cover

It is important for PFRS ensure their performance is aligned with known industry ‘leading practices’, recognized codes and standards such as the British Columbia Building Code (BCBC) for new developments, NFPA, and other accrediting bodies such as the Commission on Fire Accreditation International. They must also compare themselves with other emergency service

departments to establish goals and benchmarks such as the comparative analysis included in this report.

The summary of the risks analyzed would need to be in a newly developed policy document known as a Standard of Cover (SOC). The SOC provides:

- An assessment of the PFRS service environment including risks.
- A description of the service delivery model designed to respond to the unique characteristics of the community and to manage the risks identified with the resources available through prevention, preparedness, and emergency response.
- Emergency response benchmarks and/or performance targets for the fire department.
- A basis for evaluating performance that addresses both current and future service demands for Peachland.

Along with the previously identify need for ongoing assessment of structural building risk in the community, the SOC would also incorporate the previously identified community risk factors:

- Median age of the population
- Located along primary transportation corridor
- Regional and urban forests
- Large seasonal influx of tourists
- Rate of development

PFRS response time goals need to reflect a continuous process of examining performance trends, industry standards, and the unique fire and emergency response service needs of the community. The SOC will provide benchmarks that will consider risks and demands for service against available resources. This combination of data will define the fire departments' performance expectations, evaluate performance, identify gaps, and guide service improvements.

An important outcome with establishing a SOC is to obtain the Council's understanding of the various risk factors and the endorsement of the service levels and response time benchmarks. This provides the fire chief with the basis for a business plan and accountability framework that should be measured to balance available resources and levels of service that is affordable, acceptable, and appropriate for the citizens of Peachland

Observation #22: The PFRS does not have an established Standard of Cover policy that provides a comprehensive series of benchmarks that define an affordable, acceptable, and appropriate level of service for each municipality. The SOC will ensure the fire departments has a safe and effective response force for all emergencies including fire suppression, emergency medical services and specialized response situations.

Recommendation #22: Undertake a comprehensive risk analysis of the community and develop a standard of cover to effectively manage risks

(Suggested completion: 0-12 months)

It is recommended that the fire chief undertake a comprehensive risk analysis of the community. Based upon the assessed risk factors, it is further recommended that a standard of cover be developed that identifies the core services, performance benchmarks, and resource requirements.

Rationale: *The SOC is used to establish performance benchmarks for existing levels of service, providing opportunities for continuous improvement at the same time. This would also provide a well-articulated description of services to be provided to the community with the full understanding and endorsement of the elected officials. The benefits of completing an SOC will ensure that the PFRS has a clear understanding of the scope of overall risk for their community while enabling them to identify the resources and response capabilities necessary to adequately address those risks.*

4.5 Incident Tracking System

The incident call data that is collected provides valuable information that can be compiled and analyzed to develop ongoing or annual reports that detail the performance against approved standards. These can be in the form of written reports and/or dashboards. This information will assist Administration to make necessary adjustments in their service delivery. This information can also be provided to the Peachland District Administration and Council where necessary.

Below is an example of a dashboard report that can be generated utilizing the information captured by a records management software.



Image 6 Sample Emergency Services Dashboard⁷

	Sept	YTD	Property Value
Total Dollar Loss	\$ 20,000	\$ 1,807,100	\$ 24,774,025
Suspicious Fires	5	66	

	Sept	YTD	Targets	
Training Hours	990	8,709	8,175	●
Avg Turnout Times - Fire Emergency	00:01:55	00:01:53	00:01:20	●
Avg Turnout Times - 1st Med Resp	00:01:30	00:01:31	00:01:00	●
Pre-plans entered	15	15		

Dispatch	Sept	YTD	Projected	YTD %
Dispatch Incidents	2,631	23,256	32,234	72.1%
911 Call Volume	365	6,365		
			Targets	
% 911 Calls answered < 15 sec	99%	99%	95%	●
% 911 Calls answered < 40 sec	100%	100%	99%	●

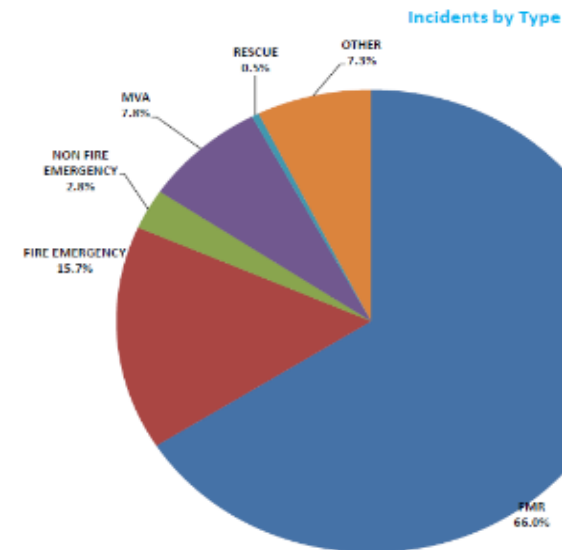
Incidents by Type	Sept	YTD	Proposed	YTD %
1ST RESP - MEDICAL ASSIST	535	5220		
1ST RESP - <<WAIT FOR POLICE>	1	98		
1ST RESP - CARDIAC	7	84		
FMR	543	5,402		
ALARM	75	622		
BURNING COMPLAINT	19	207		
SMOKE	7	106		
STRUCTURE FIRE	6	88	116	76%
MINOR FIRE	8	80		
WILDFIRE/GRASS/BRUSH/OUTDOOR	3	67		
CAR FIRE	8	45	64	70%
RECHECK	2	40		
CHIMNEY FIRE	0	20		
OVEN/POT ON STOVE	0	6		
EXPLOSION	0	3		
FIRE EMERGENCY	128	1,284		
CARBON MONOXIDE ALRM	7	72		
GAS/OIL SMELL/SPILL	8	54		
NATURAL GAS LEAK	5	44		
POWER/TEL/CABLE LINE DOWN	2	30		
AIRCRAFT STANDBY/INCIDENT	0	15		
PROPANE LEAK / SMELL	1	12		
HAZARDOUS MATERIAL	1	4		
BOMB THREAT	-	-		
NON FIRE EMERGENCY	24	231		
MVA/EXTRICATION	53	389		
MVA	47	250		

	Sept Actual	Mthly Budget	Mth%	YTD Actual	YTD Budget	YTD%	
Total	\$ 1,462,500	\$ 835,283	175.1%	\$ 13,129,246	\$ 10,026,860	130.9%	●
OT	\$ 110,889	\$ 31,051	357.1%	\$ 788,343	\$ 325,558	242.2%	●

OT By Cost Centre	2014	2015	Difference
Suppression	\$ 437,326	\$ 732,551	● \$ (295,224)
Dispatch	\$ 48,118	\$ 35,210	● \$ 12,909
Prevention, Training & Admin	\$ 33,065	\$ 20,582	● \$ 12,483
All Departments	\$ 518,510	\$ 788,343	● \$ (269,833)

Inspections	Current Mth Completions	Current Assigned Mth	YTD	YTD Targets
Total Inspected Properties	378	334	● 3761	3007 ●
Fire Prevention Consults	53		450	
A Shift	38	40	● 314	317 ●
B Shift	42	43	● 310	311 ●
C Shift	34	35	● 317	320 ●
D Shift	36	39	● 301	313 ●
Inspectors	228	177	● 2519	1746 ●

Public Education	Events	Attendees
	150	8,030



⁷ Source: City of Kelowna Fire Services

Observation #23: PFRS has access to extensive amount of data captured from all their activities. Structuring a process of acquiring and analyzing the information in a consistent fashion will assist the PFRS Administration in identifying gaps in their service objectives and provide an accountability process for established service levels.

Recommendation #23: Utilize records management and data tracking software to collect and analyze response performance

(Suggested completion: 12 -24 months)

It is recommended PFRS conduct recurring reviews of response experience utilizing appropriate record, data tracking, and performance measuring tools for collection and analysis of performance objectives. Quarterly reports to the Chief Administrative Officer are the recommended frequency for these reports.

Rationale: Properly formatted reports can provide the administration valuable feedback to their performance along with the community risks and resource requirements.

4.6 POC Firefighter Challenges and Limitations

A major concern for the majority of POC and volunteer fire services is the availability of firefighters to respond to initial calls for assistance, as well as ensuring an appropriate ERF for all types of emergencies. PFRS recognizes this issue, particularly during the normal workweek daytime hours, where paid-on-call firefighters are working their full-time job or otherwise unavailable. This issue is not unique to PFRS, as many POC composite fire departments face the challenge of maintaining an effective firefighting complement to consistently meet the demands of their community.

PFRS currently relies on their fire chief to be available during the daytime, evening, and weekend hours. As well, the fire chief has additional District of Peachland administrative duties. While this does provide a response capability, it has some administrative and management challenges that are discussed in Section 3.2.3.1.

As call volumes increase and other department obligations increase, it is not uncommon that individual firefighters become somewhat selective on the calls they respond to. Advancements in notification processes have improved information out to the responders but have the unintended consequence of allowing the firefighter to be somewhat selective to the types of calls they respond to.

There are no criteria that establishes the number of POCs required that is appropriate for any given population or call volume. Rather, the key is to monitor the level of participation of each member's participation in responses and training requirements. Typically, 33% of the members are consistently active and participate in the bulk of training sessions and responses amongst POC fire services like PFRS. This is indicative of the POC firefighter limitations and cannot be interpreted as a performance shortfall for any of the PFRS POCs that cannot be as active as they would perhaps like to be. PFRS Administration recognizes this and consciously encourages a



proper life balance through wellness, fitness programs, and other initiatives that balance department commitments and the POC's availability.

Legislative requirements for training and certifications have increased significantly over the last number of years for firefighters. In a recent FUS article the following was identified as some of the challenges/limitations of a volunteer/paid-on-call emergency response system:

Volunteerism Down

Roughly 80% of fire departments in Canada are staffed by volunteers. That means that when a building is on fire, or other type of emergency, there will be several extra minutes in total response time as firefighters need to travel from their homes or places of work to the fire hall before suiting up and responding to the fire scene with an engine.

In years past, before the digital age, participating as a volunteer on the local fire department was a fun way to be part of the local community. It seems, however, that people's lives have become busier and volunteering on the local fire department is seen more as a second job than a way to be part of the community.

This is exacerbated by businesses that historically were very supportive of volunteer fire departments, but that in recent decades have pulled their support. In fact, more and more businesses are advising their employees that they are not allowed to leave while on shift. This may be understandable since businesses are focused on producing their own financial results, which are unlikely to benefit from having employees called away in the middle of shifts, leaving their posts unmanned.

There are many factors that have resulted in the downward trend in volunteer firefighting, including location economics. Firefighters often do not live and work in the same town. In Vancouver, for example, few firefighters can afford to live in the city, so they have homes in cities like Coquitlam, Maple Ridge or Surrey, which may result in their place of residence being farther away from the fire hall.

An interesting side note is that many insurers assume large cities are 100% career fire forces, but this is not the case. More and more cities are looking to reduce their overhead by cutting fire department budgets and fire departments are turning to volunteer or paid on-call models to maintain some level of fire protection.

The biggest factor in reduced volunteerism seems to be apathy. More people are assuming that they do not need to contribute, as someone else will. When it comes to public fire protection, however, this can have very serious consequences. A lack of standards for training firefighters has been identified as a serious problem.

There are several standards for training firefighters, but they are expensive and time-consuming to implement. The result is that most communities do not implement them. In fact, a recent study for British Columbia firefighters found it was not economically feasible to train firefighters to the minimum National Fire Protection Association Standard Level 1. For volunteer fire departments, this is a big problem, and for the communities that they serve, there is a significant liability exposure in having emergency responders who are not certified Level 1 firefighters responding to



very dangerous incidents on behalf of the community. This is beyond the serious risk to firefighters themselves.⁸

The fire chief needs to get the cooperation from his officers to provide significant oversight of their POC firefighters always recognize and accept the level of commitment expected of them in the goal of providing safe and effective fire response. There is a point in the growth of a community where reliance on a POC firefighting complement alone is insufficient for the actual and potential risks that exist. It is our opinion that PFRS is not at this point in their assessed risk factors and growth that warrants a full-time firefighter department.

Over the next 1-2 years, a continuous review of the response statistics as identified in this report is crucial in validating the effectiveness of their service in terms of public and firefighter safety. Should the response statistics over the next five years or less indicate that PFRS response performance is not meeting the service levels set by the District of Peachland Council, the transition to an enhanced composite department with additional full-time staff would be required.

⁸ Reference: <https://www.canadianunderwriter.ca/features/far-from-standard/>

4.7 Response Time Maps

The more strategically located a fire hall is in a community and the more direct the travel routes are between the fire halls and different parts of the community, theoretically, the lower the response times will be from that fire hall. Response times typically refer to the combination of call handling, enroute and response/travel time.

4.7.1 Response Map Analysis

Response travel time is a product of the distance that must be traveled between the fire hall and the incident, and the speed travelled to the incident. The more centrally located a fire hall is in a community and the more direct the travel routes between the fire halls and different parts of the community, the lower the theoretical response times will be from that fire hall. The District of Peachland Council, administration, and fire chief have recognised the current challenges and limitations of the current fire hall and are in the process of identifying a location and building model for a new fire hall.

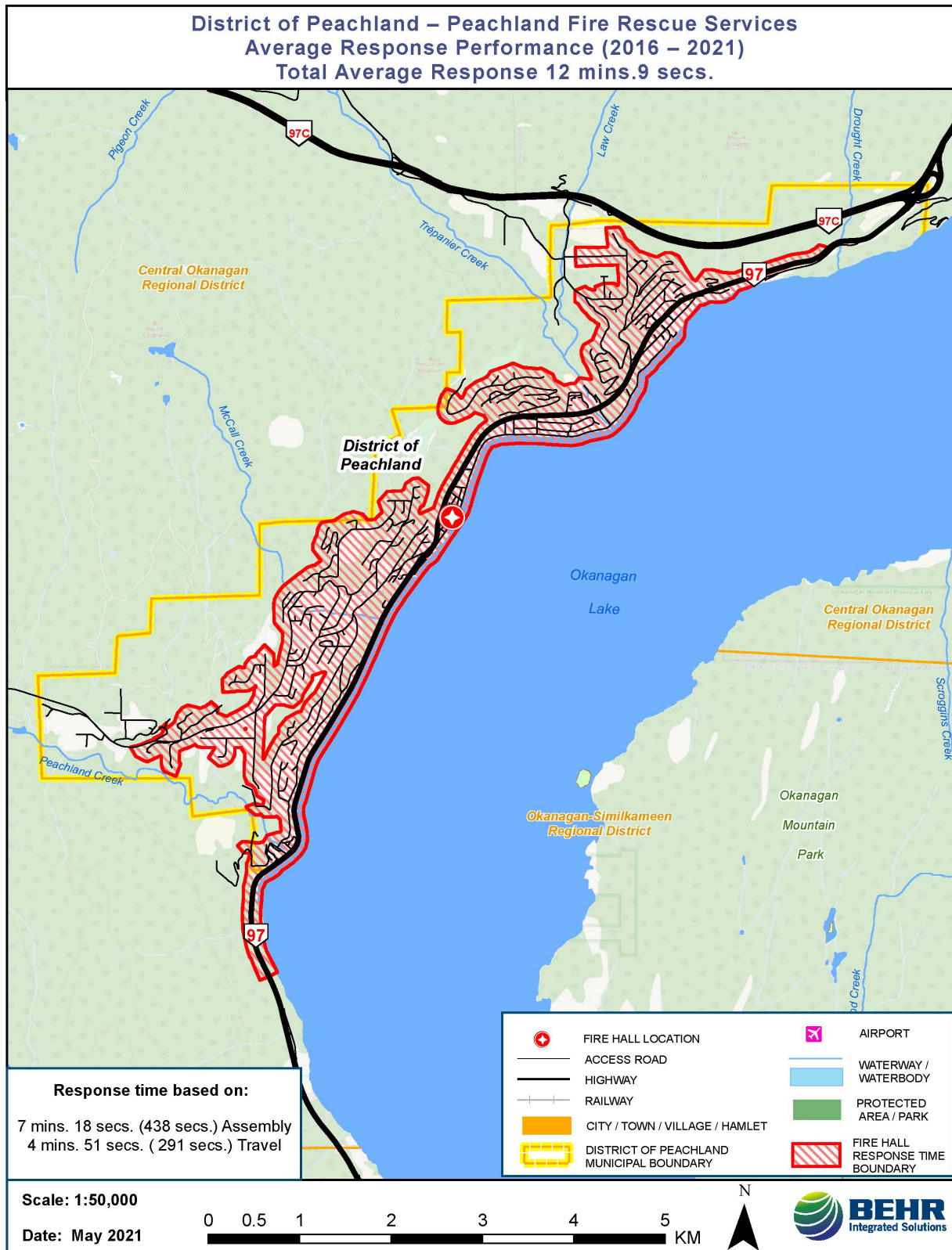
The District of Peachland Local Service Area is 15.98 km² with a population of approximately 5,000. Based on NFPA 1720, this would be categorized as mostly suburban with areas of rural populations. Given the assessed risk factors identified in this review regarding light industrial and commercial activities, transportation corridors, urban wildfire interface, water distribution systems for firefighting, it was considered prudent to examine appropriate response time standards. As such the District of Peachland has been determined to be a suburban demand zone requiring 10 firefighters responding within 10 minutes at the 80th percentile. The following maps have been developed using PFRS historical response data.

Note: NFPA is an industry leading practice guideline only, and not a requirement. The response mapping methodology is available in Appendix C.

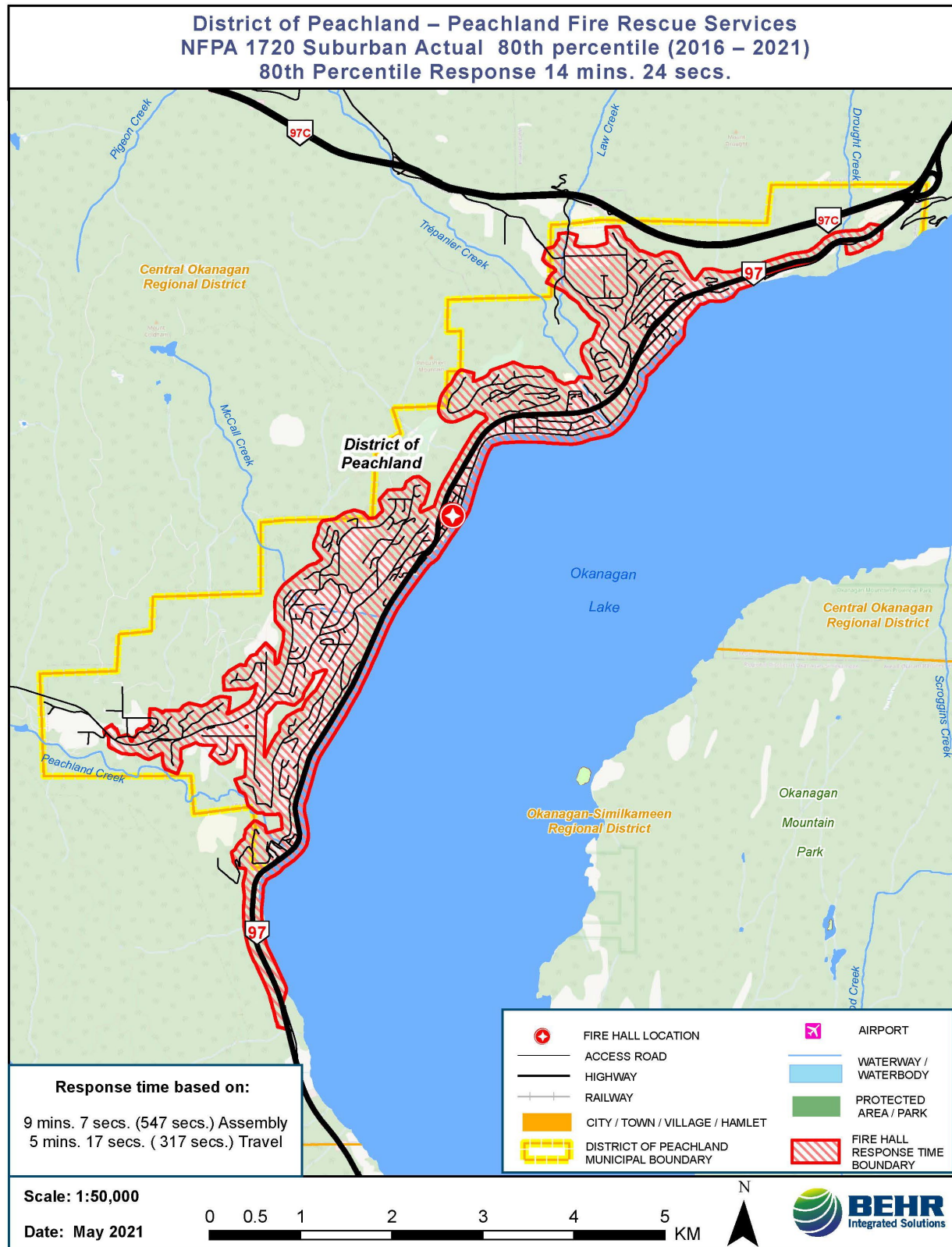
Map 2: PFRS (2016-2021) Average Response Performance: 7mins 18 secs (438 secs) assembly and 4 mins. 51 secs. (291 secs.) travel time for a total average response of 12 mins. 9 secs.

Map 3: PFRS (2016-2021) NFPA 1720 Suburban Actual 80th percentile of 9 mins. 7 secs. (547 secs.) assembly and 5 mins. 17 secs. (317 secs.) travel time for a total average response of 14 mins. 24 secs.

Map 2: PFRS Average Response Performance (2016-2021)



Map 3: PFRS NFPA 1720 Suburban Actual 80th Percentile (2016-2021)



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SECTION 5 CONCLUSION

This Fire Department Master Plan was completed to assist the District of Peachland and the Peachland Fire Rescue Service in evaluating their current fire services and establishing a strategy to provide efficient and effective fire, rescue and emergency services. Particular emphasis was placed upon a proposed site, evaluation, and design for a new fire hall.

By analyzing several factors to determine the effectiveness and efficiency of the Peachland Fire Rescue Service we evaluated the operational and administrative aspects of the Department, as well as the community profile, risk factors, Peachland Fire Rescue Service staffing, core services and programs, training, recruitment, and retention, facilities and equipment. Additionally, we evaluated the mutual aid agreements, regional services and current Hazard Risk and Vulnerability Assessment. The response data for Peachland Fire Rescue Service was assessed with a focus on the current performance, capabilities and alignment with both existing and projected risks, and levels of demand.

There are several observations and recommendations in this review that need to be considered to improve operational effectiveness and efficiencies. Key among the 23 recommendations is the establishment of a standard of cover policy that defines service levels, identifying the life span of each apparatus and replacement schedule, establish a full time assistant chief position, develop a proactive fire prevention program and up to date fire pre-plan process, and continue the process of relocating the fire hall to the proposed site as an immediate priority.

It must be clearly understood that while the proposed site can accommodate a new fire hall and will be a vast improvement from the current facility, it is however smaller than an average sized lot for fire department operations. It will accommodate the core business needs of PFRS with some compromises in other areas and functions. Variances will be required for parking, and reduced setbacks. Furthermore, there will be no area for a shared space (multi-use) with other emergency services, nor to conduct outdoor training or the ability for expansion as the need arises. Notwithstanding the lot size limitations this site has been deemed as suitable for the fire hall in terms of central location, geographic coverage for emergency response, accessibility for major response routes, and paid on-call staff emergency response turnout.

Although each recommendation has a corresponding timeframe, it is important to note this Fire Department Master Plan needs to be re-visited on a regular or annual basis to confirm that the observations and recommendations remain applicable. Consideration to undertake the recommendations outlined in this Fire Department Master Plan will better position the Peachland Fire Rescue Service to mitigate community risk factors, monitor response capabilities and performance, while maintaining both excellent community relationships and value for money.



Based on our comprehensive assessment of the community risks and current resources; we have found the Peachland Fire Rescue Service to be well led and managed as a 'paid-on-call' department. We would be remiss if we did not specifically acknowledge the professionalism, leadership, diligence, and continuous improvement focus of Fire Chief, Dennis Craig and the entire Peachland Fire Rescue Service team. Notwithstanding the observations and recommendation within this Fire Department Master Plan, the Peachland Fire Rescue Service continues to provide a broad range of specialized services effectively and efficiently, providing excellent value for money for the citizens of District of Peachland.

Appendix A: Glossary of Terms

Apparatus	Any vehicle provided with machinery, devices, equipment, or materials of the Fire Department for firefighting as well as equipment used to transport firefighters or supplies.
Assembly Time	From the time the notification sounds in the fire hall until the first vehicle leaves the hall. In a full-time department this is expected to be within 80 seconds but for volunteer departments the time to collect a response crew can vary widely depending on location and time of emergency as well as all the factors that impact travel time.
Chute Time	See Assembly Time
Dangerous Goods	This term is synonymous with the terms hazardous materials and restricted articles. The term is used internationally in the transportation industry and includes explosives and any other article defined as a combustible liquid, corrosive material, infectious substances, flammable compressed gases, oxidizing materials, poisonous articles, radioactive materials, and other restrictive articles.
Discovery	This is the time between the start of the emergency and when someone or an engineered system has detected the incident.
Dispatch Time	This is the time required to extract the necessary information from the caller to allow the proper response to be initiated. The dispatcher identifies the correct fire location and initiates the dispatch by paging the appropriate fire hall.
Emergency Call	This is the period between discovery and the actual notification of emergency services.
Emergency Communications Centre	A facility dedicated to service receives calls, processes them, and then dispatches emergency units to the correct location in the appropriate time-period.
Emergency Operations Centre	The protected sites from which civil officials coordinate, monitor, and direct emergency response activities during an emergency or disaster.
Emergency	Any occasion or instance that warrants action to save lives and to protect property, public health, and safety. A situation is larger in scope and more severe in terms of actual or potential effects.
Fire Suppression	The application of an extinguishing agent to a fire at a level such that an open flame is arrested; however, a deep-seated fire will require additional steps to assure total extinguishment.
Hazard Analysis	A document, which identifies the local hazards that have caused, or possess the potential to adversely affect public health and safety, public and private property, or the environment.
Impact	The effect that each hazard will have on people such as injury and loss, adverse effects on health, property, the environment, and the economy.



Incident	A situation that is limited in scope and potential effects.
Intervention Time	The time from fire reporting to the point where the first arriving pumper, or other apparatus providing comparable functions, arrives at the fire scene and directs an extinguishing agent on the fire.
Mutual Aid Agreement	An agreement between jurisdictions to assist each other during emergencies by responding with available manpower and apparatus.
National Fire Protection Association	The National Fire Protection Association (NFPA) is an internationally recognized trade association established in 1896 that creates and maintains standards and codes for usage and adoption by local governments to reduce the worldwide burden of fire and other hazards. This includes standards and guidelines to which many fire departments utilize to carry on day-to-day operations.
Response	Those measures undertaken immediately after an emergency has occurred, primarily to save human life, treat the injured, and prevent further injury and losses. They include response plan activation, opening and staffing the Emergency Operations Centre, mobilization of resources, issuance of warnings and direction, provision of aid, and may include the declaration of a State of Local Emergency.
Risk	The chance or likelihood of an occurrence based on the vulnerability and known circumstances of a community.
Setup Time	This is the time necessary on site to evaluate the necessary actions, position the required resources and commence the intervention. In the case of a fire, completing size-up, assigning the necessary tasks, and deploying resources can provide delays on scene. A well-trained crew can minimize these delays while providing a safe, successful response.
Standard Operating Guidelines (SOG)	A written organizational directive that establishes or prescribes specific operational or administrative methods to be followed routinely, which can be varied due to operational need in the performance of designated operations or actions.
Standard Operating Procedures (SOP)	A written organizational directive that establishes or prescribes specific operational or administrative methods to be followed routinely for the performance of designated operations or actions.
Travel Time	Once a vehicle leaves the fire hall, it must negotiate the best route between that point and the location of the emergency. Factors to consider for travel time are driver skill, weather, traffic, topography, road conditions and vehicle capabilities.

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⁹ Source: City of Kelowna Fire Services



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¹⁰ Statistics Canada. 2016.

Appendix C: Theoretical Response Mapping Methodology

Response travel times are directly influenced by station location and can be varied based upon a cost/risk analysis and the development of performance targets.

Base Data Layers Requested

- Hydrology
- Single Line Road/Transportation Network
- Railways
- Municipal Boundaries
- Parks
- Projection File
- Orthophoto (GeoTIFF, Mr.SID), if available
- Emergency Services Locations

Data Formats

- Preference of ESRI Shapefiles

Purpose of Files

A. Hydrology

- i. Identify needs for response to water locations (if dependent on a water response unit).
- ii. Can be identified and analyzed with the rail network to locate spill contaminations, as well as containment for overland flow & flooding to water spills.
- iii. Locations of bridge crossings which can convert to varying incidents, as MVC/MVA, spill contaminants, etc.
- iv. Assists in the definition of the map for locational awareness by others
- v. Completes the map

B. Single Line Road/Transportation Network

- i. Used to determine response times from emergency locations to determine a network based on road speeds.
- ii. Roads are created into a network for response

C. Railways

- i. Identified risk areas for impeding response time when crossing a roadway or proximity to municipal areas will also determine the response and apparatus used for a derailment response or other rail emergency or risks, such as chemical spill evacuations.

D. Municipal Boundaries

- i. Identifies the limits to response for mutual aid and responsibilities when overlaps occur within a response area. Also identifies sub areas for specific mapping and identification of municipal and regional response zones. Provides information for gap analysis for future state locations or refinement of locations.

E. Parks

- i. Identifies the potential risk areas due to accessibility issues for tracts of land, as well as constraints and opportunities for new locational analysis for or against new stations within a municipality. Ability to determine development of new locations due to proximity. Parks are identified as local, regional, provincial, and national.

F. Projection File

- i. To ensure that we have the same data set up as being used by the Municipality or Client, measurements (both distance and time) and spatial location are correct when determining analysis.

G. Orthophoto (GeoTIFF, Mr.SID), if available

- i. We typically do not use the ortho on the output maps, but the analysis sometimes needs clarification of what is on the ground, and we use it to quickly ground truth locations and information needed prior to asking clients for clarification, or to substantiate clarification of an area.
- ii. Is a nice to have, yet hard to use, as it takes up a lot of memory/space and is difficult to ship/transfer.

H. Emergency Services Locations

- i. Identify the actual location rather than a theoretical location based on an address match to ensure that the data location is as correct as possible, and no mis-locations are identified on the initial running of the theoretical response times.
- ii. Locations may be moved from within a parcel to the front of the parcel whereby it touches the road network. Ensures the response from the station is captured. There are no corrections made to the movement of station to time, as it is typically within 50 metres.

Theoretical Response Zone**A. Assumptions**

- i. Weather is average – no storms, rain, snow etc.
- ii. Roadway segments contain a node/junction at intersections
 - If not available, road network needs to be cleaned and fixed
- iii. Roadways need to sometimes extend beyond some municipalities
- iv. Emergency responders are trained on response vehicles
- v. Response vehicles are in good condition
- vi. Roads are dry and in good condition

- vii. Left turns are not reduced by a time %
- viii. Road speeds are provided by client, if not
 - Road class table used to populate speeds based on road classification
 - Road speeds are reduced from the posted sign, typically no more than 5%
- ix. Traffic volume is average, there is no congestion or there is a free-flowing lane to be used
- x. Rail crossings are free to cross and do not impede response
- xi. Time of day is based on an average time from 9 am – 9 pm
- xii. Opticom (or similar product for traffic light manipulation) are present to allow for free moving response
- xiii. Intersections of roads are not reduced (the roads are reduced from other project limits and averaged over time for generality of best fit)
- xiv. School zones are not adjusted unless identified, then changes to road net are made

B. Response Time

- i. Customized response based on Emergency Services Input
- ii. Response time includes in 80% of all calls for service
 - Total drive time along roads (determined above by road speeds) with:
- iii. Variances are identified and are tweaked based on known data or other trends

C. Response Polygons

- i. Identify general area of response from the outer most limits driven
- ii. Also identify response zones for mutual aid
- iii. Identify gaps in response
- iv. Aid in the development of Fire Zones for response
- v. Assist in the identification of new stations
 - Also identifies needs to move stations to another location, as required

Additional Analysis

A. Out of Scope Analysis (needs further discussion with client)

- i. Transition from project to operationally based
 - Specific distance and travel
 - Based on time of day
 - Based on time of year
 - Call volume
 - Call types
 - Modeling
 - Scripting for batch work



B. Data Availability

- i. When data is available from clients is detailed enough, it is used
- ii. Not all data is detailed enough, and assumptions are made

C. Analysis

- i. Additional analysis can be performed (as reduction of road speeds to an intersection)
 - For above example, identification of intersections can be complex, and data not always available:
 - Stop Sign
 - Three Way Stop
 - Yield
 - Lights
 - Flashing Light
- ii. Tends to be time consuming
 - a. Clients not willing to engage cost of this project
 - b. Levels of data may not be accessible
 - c. Missing detail
 - d. Usually is a one-off project and new data is typically not leveraged

Appendix D: Work Experience Program

Work Experience Programs

CHRIS CORMACK—BIG WHITE FIRE DEPARTMENT

Overview

- ▶ History
- ▶ What do WEP members do?
- ▶ How Work Experience Programs work?
- ▶ Advantages / Disadvantages
- ▶ Keys to success
- ▶ The future
- ▶ Q & A

Work Experience Programs -History Big White Fire

► The Evolution

- Devise a Plan to Recruit and Retain Firefighters
- Existing POC Crew Training Time (2 Years Average 1001 Level 2)
- Methods of Recruiting well trained Fire Fighters
- Where are we now?
 - Average over 60 Applicants for 7 positions
 - Program entering into its 17 year
 - 2013 First International Student
 - 97 FF since 2001- 72 Hired Career-13 POC
 - Our department is represented all over Canada

WEP – The Basics

► What do they do?

The work of a career fire fighter!

- Station duties
- Train
- Fire prevention
- Fire and life safety presentation
- Volunteer in the community
- Fundraisers
- Respond to calls outs
- They do it all with a strong work ethic and a great attitude

WEP – The Basics

- ▶ How do they work?
 - ▶ Recruitment, Word of Mouth, Magazines, Websites, Local Promoting
 - ▶ Application & Screening Process (Point System)
 - ▶ FF1001 Level 2 Minimum requirement to apply
 - ▶ Start Date June 1st, 11 month program.
 - ▶ When can they respond
 - ▶ Many courses throughout the program
 - ▶ Quarterly Evaluations

Current BC WEP Programs

- 1) Sun Peaks Fire Rescue – 4-5 Members
 - Runs – May 1st – Oct 31st (6 months)
 - 1 month of training before crews start responding
 - (Includes...7 day boot camp, EMR, EVO)
 - Train 2 full days a week, 1 practice night
 - Live in staff accommodations
 - Allowed to work part or full time
 - Can apply to other departments while part of the program
 - POC - \$15/call \$20/practice night
 - Fire Chief Colin Cannon, Supervisor - Capt Joss Advocaat

Current BC WEP Programs

2) Merritt Fire Rescue Department – 5-6 members

- Ongoing (12 months)
- 4 week boot camp, fire, FR, Auto-Ex, Rope Rescue
- 6 training sessions a week (12 hours/wk)
- Live at the fire hall
- No part or full time work allowed
- Can apply to other departments while part of the program
- \$3600 Ed Allowance/living exp, pass to the aquatic centre & gym, POC calls and training
- Fire Chief David Tomkinson, Supervisor – Lt. Carl Johnston

Current BC WEP Programs

3) Creston Fire Rescue – 5 members

- WEP Started fall of 2014
- Runs - Nov 1st – Oct 31st (12 months)
- 1 month of training before crews start responding
- Live at the fire hall
- No part or full time work opportunities
- Can apply to other departments while part of the program ?
- \$2400 Ed Allowance, pass to the local rec centre, \$100/mn janitorial, POC pay
- Fire Chief Mike Moore, Supervisor – Asst Chief Jared Riel

Current BC WEP Programs

4) Big White Fire Dept. – 7 members

- WEP Started 2001
- Runs - June 1st – Apr 15th (11 months)
- 1 month of training before crews start responding
- Live at the fire hall (1.3 million addition completed 2017)
- No part or full time work opportunities
- Can not apply to other departments while part of the program
- POC pay \$18/hr 2 hr min, \$18/hr 2 hr practice, Ski Pass
- Fire Chief Jamie Svendsen, Supervisor – DC Chris Cormack

WEP – The Basics (continued)

▶ How to start?

- ▶ Why would you want to start a program
 - ▶ Staffing Requirements
 - ▶ Response Times
 - ▶ Truck and Equipment Maintenance
 - ▶ More Community Involvement
 - ▶ Increase POC membership
 - ▶ Increase Department moral
 - ▶ Increase Day Time Turnout

WEP – The Basics (continued)

- ▶ How much do they cost?
 - ▶ Big White 2017 Budget \$35,000.00
 - ▶ 2017 Figures
 - ▶ Advertising and recruiting \$300.00
 - ▶ Living Supplies \$2,500.00
 - ▶ Uniform/Bunker Gear \$8,700.00
 - ▶ Lunches/BBQ \$1,500.00
 - ▶ Physical Fitness \$3,000.00
 - ▶ Training Courses \$8,000.00
 - ▶ Manuals/Office Supplies \$700.00
 - ▶ Ski Passes \$0.00 (\$700 x 7)
 - ▶ Ride-a-Longs \$1,500.00
 - ▶ Graduation Ceremonies \$3,200.00
 - ▶ Electricity/Water/Sewer \$3,200.00

WEP – The Basics (continued)

- ▶ Costs not reflected in previous slide
 - ▶ 60% of DFC Wages are spent running the Program
 - ▶ 20% Fire Chief Wages Admin/Training
 - ▶ 15% of DFC FPO are spent assisting with Training/Fire Prevention/Pub Ed
 - ▶ Some Training costs and wages absorbed in the Volunteer training and call out budget.
 - ▶ POC Wages
 - ▶ Most WEP see their cost as an extension of their education (\$3,000 - \$5,000 out of pocket)

Advantages

- ▶ The Obvious
 - ▶ More firefighters
 - ▶ More work
- ▶ Maybe not so Obvious...
 - ▶ Image
 - ▶ Culture



Disadvantages

- ▶ Amount of time to oversee program (7 FF 24/7 x 11 months)
- ▶ Living in close Proximity with each other for 11 months
- ▶ Takes them away from family, girlfriends, wife, for 11 months
- ▶ Leaving the program for interviews, fitness (CPAT) family matters
- ▶ Reference checks
- ▶ POC not making trucks, becoming complacent, lose interest
- ▶ DFC devoted to 4 months of training 4-5 days a week
- ▶ Wear and Tear on equipment
- ▶ You become a parent, assist with personnel matters, Life Long Mentors
- ▶ Little or no time off November to April

Key to Success

- ▶ Structure
- ▶ Feedback
- ▶ Training
- ▶ Inspiration



WEPs Future
-Where do we go from here?



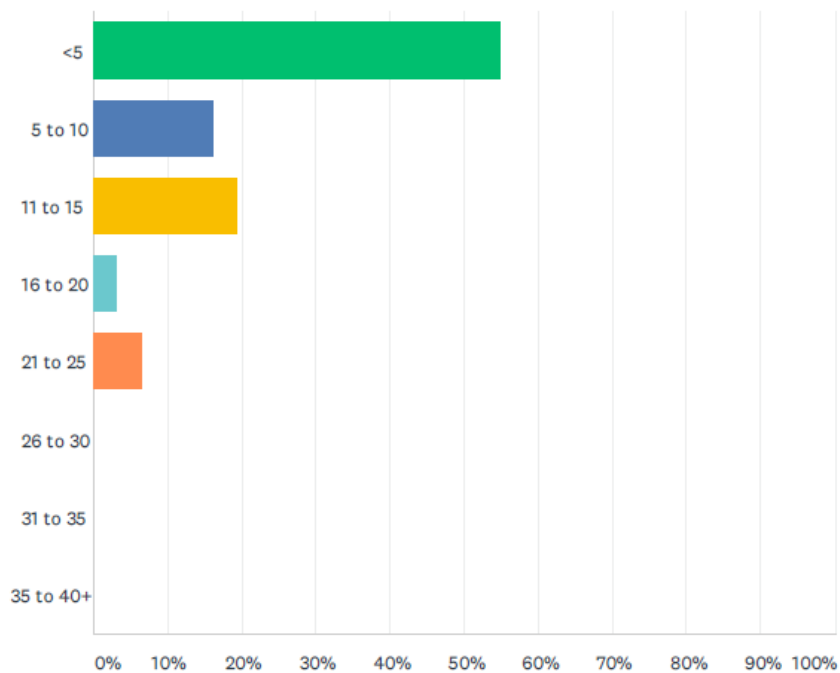
Q & A

Thank you!

Appendix E: PFRS Online Survey Results

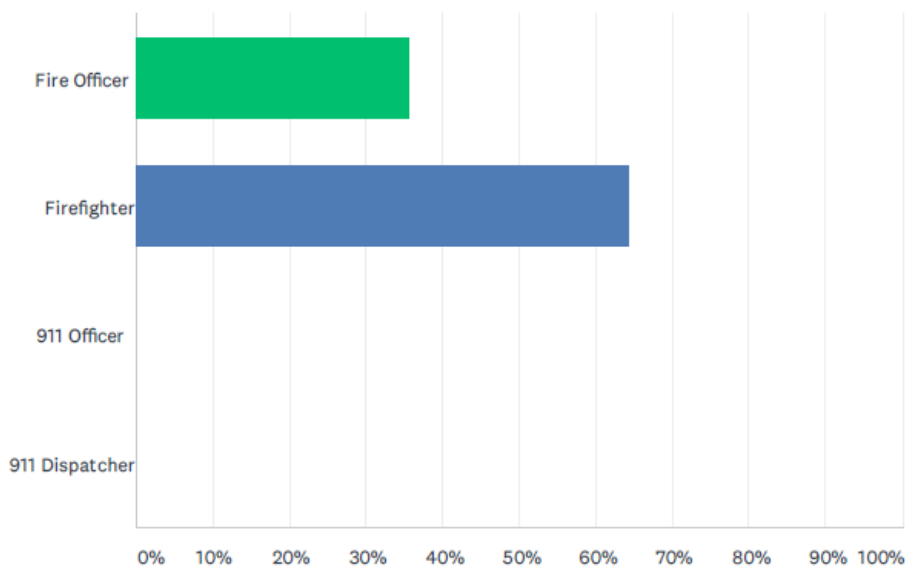
Q1 How many years have you been a member of the PFRS?

Answered: 31 Skipped: 0



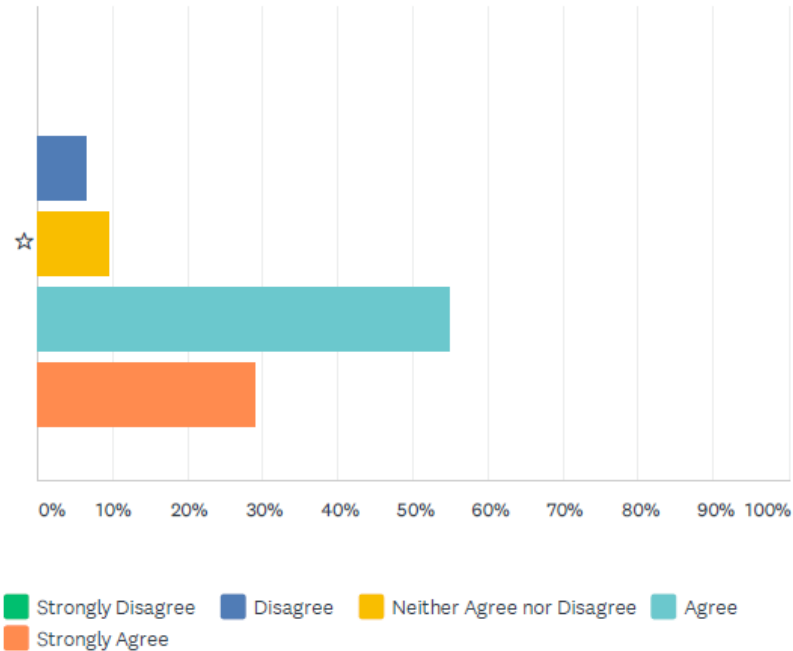
Q2 What is your position?

Answered: 31 Skipped: 0



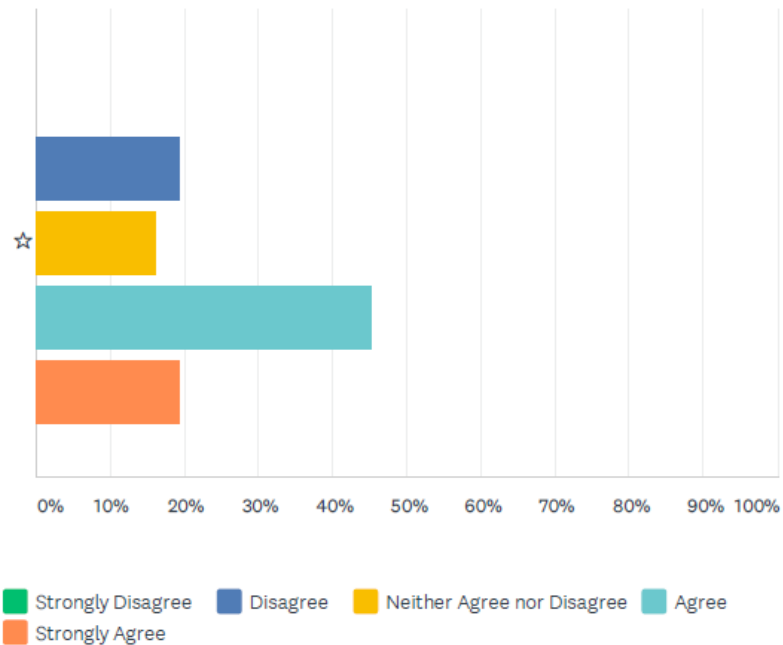
Q3 The public has a good understanding of what the fire and rescue services department does and its capabilities.

Answered: 31 Skipped: 0



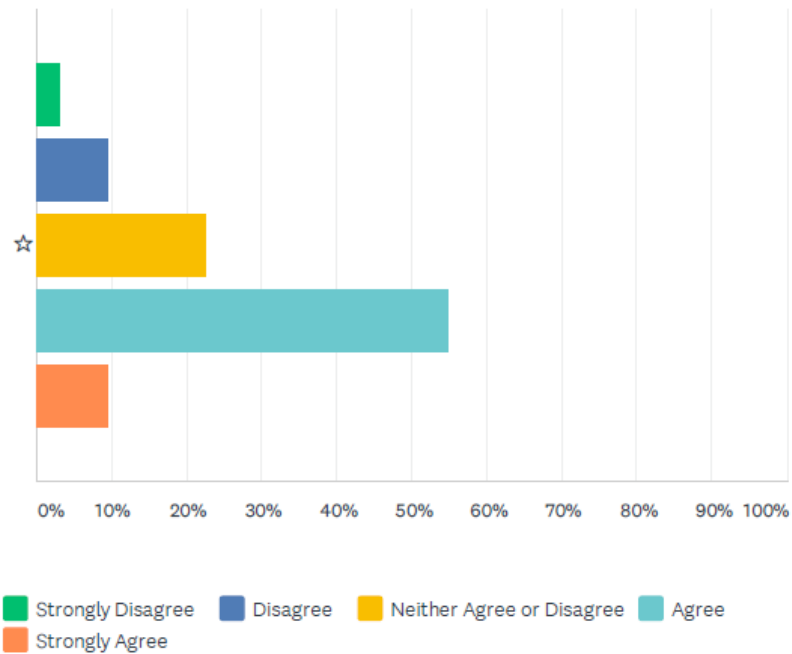
Q4 Your community is adequately protected with the current fire and rescue resources.

Answered: 31 Skipped: 0



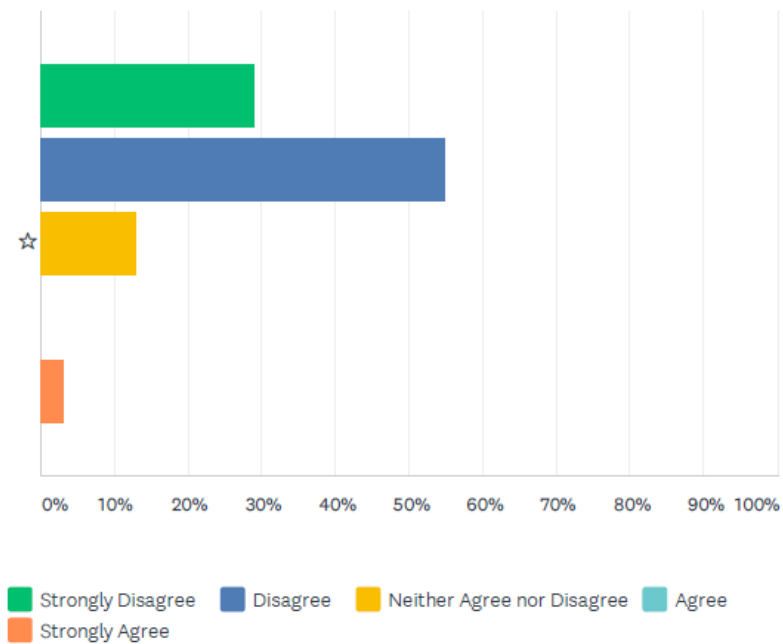
Q5 The current response model is adequately staffed.

Answered: 31 Skipped: 0



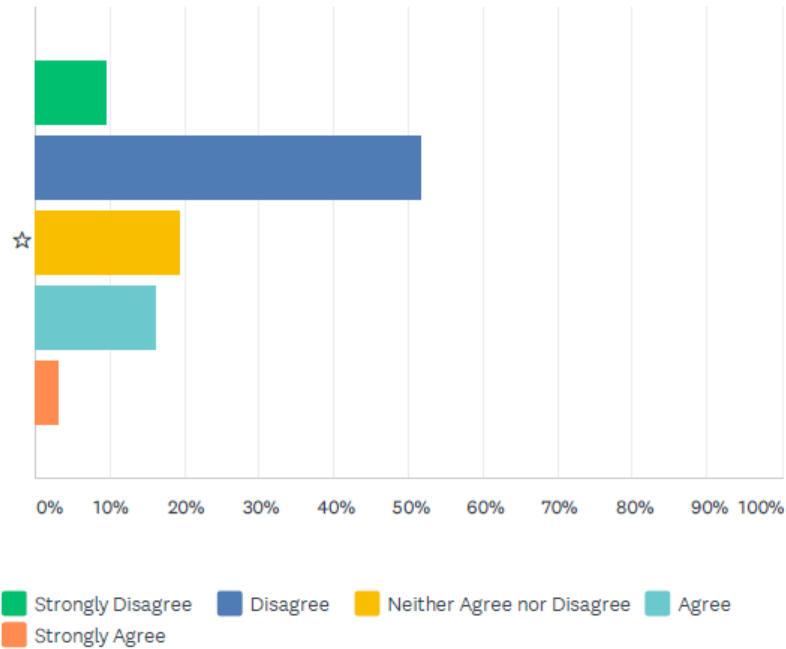
Q6 Medical responses are overtaking the fire and rescue services department's response system capacity.

Answered: 31 Skipped: 0



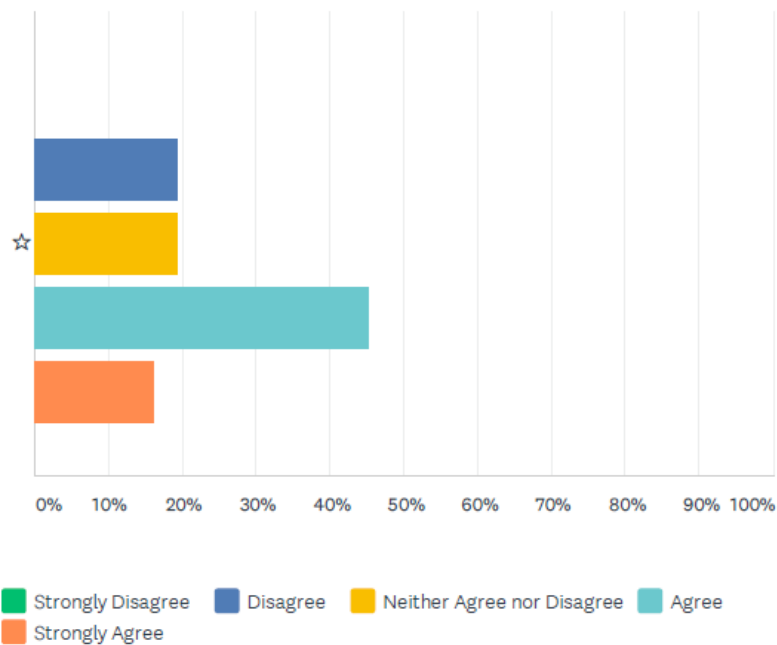
Q7 Based on the growth of the community, the fire and rescue services department can keep up to future demands.

Answered: 31 Skipped: 0



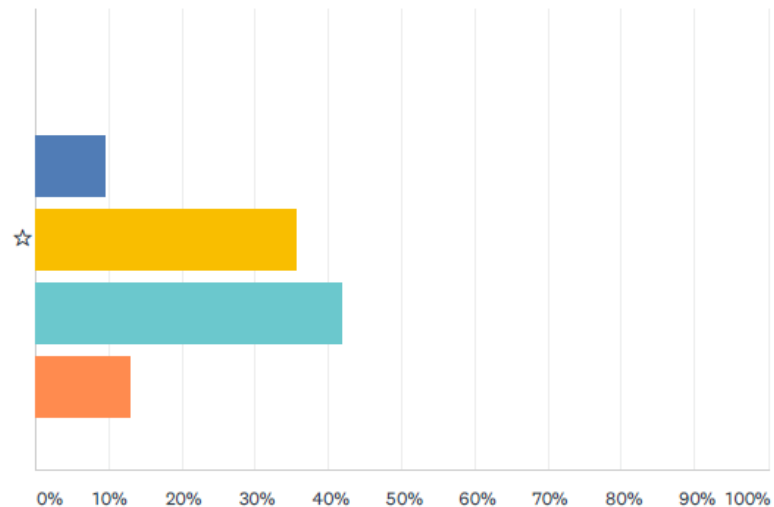
Q8 The current level of training is adequate.

Answered: 31 Skipped: 0



Q9 The current recruiting program is effective.

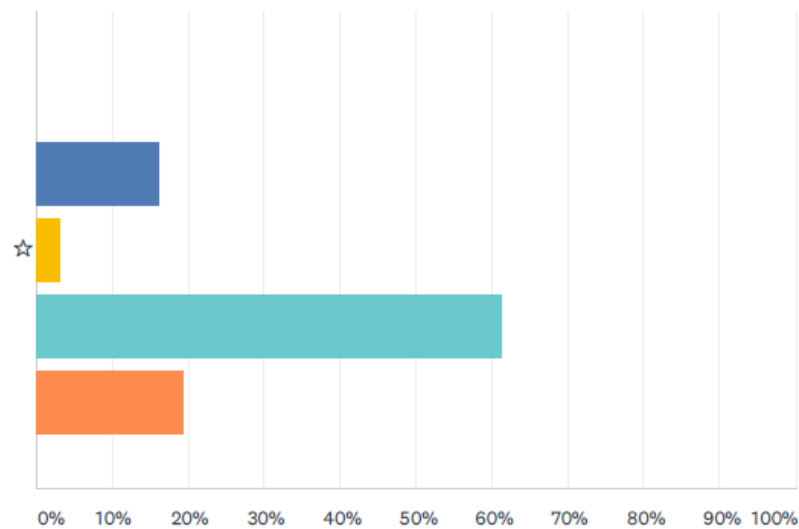
Answered: 31 Skipped: 0



Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

Q10 Recruits receive adequate training before they move to the floor.

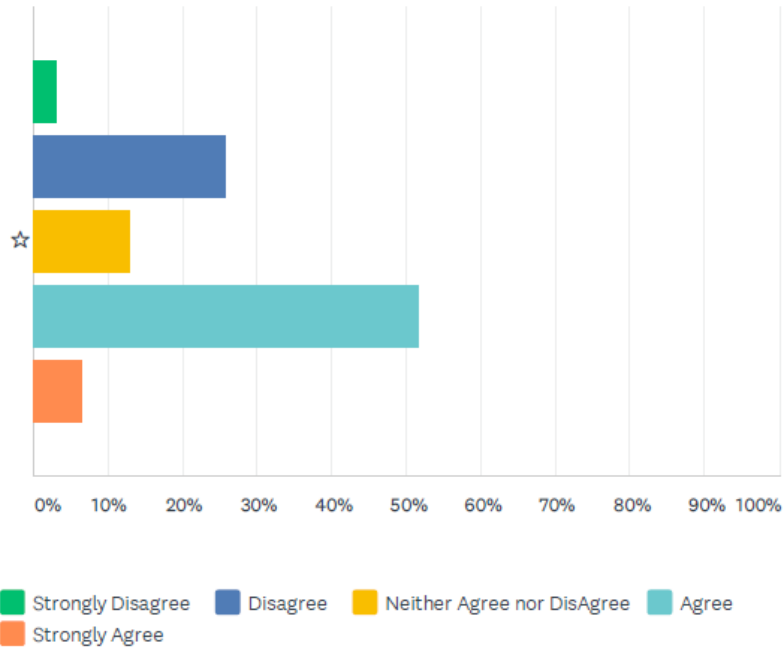
Answered: 31 Skipped: 0



Strongly Disagree Disagree Neither Agree nor Disagree Agree Strongly Agree

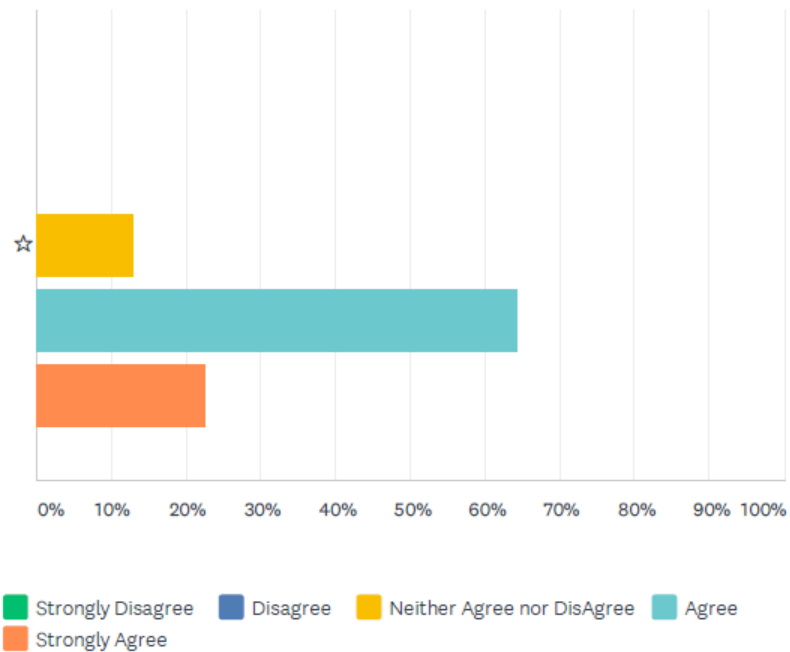
Q11 The current vehicle fleet is adequate.

Answered: 31 Skipped: 0



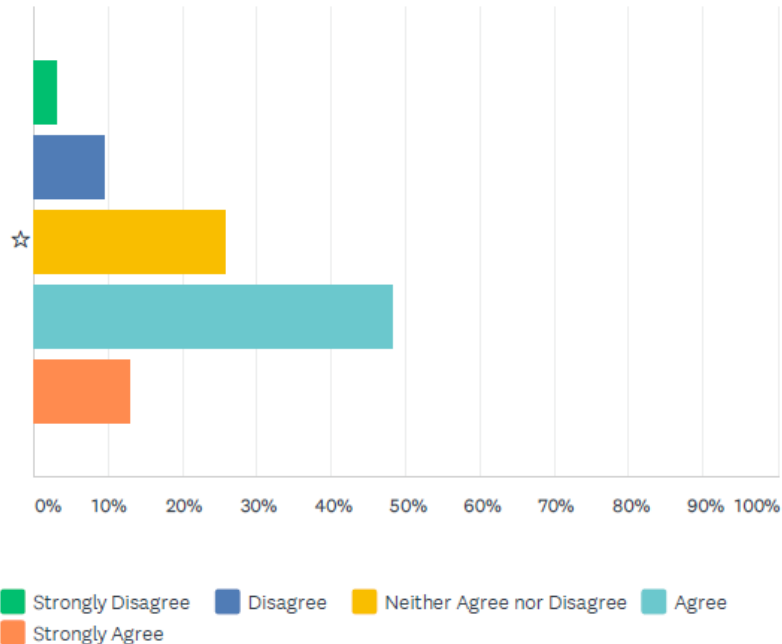
Q12 The current vehicle fleet is adequately maintained.

Answered: 31 Skipped: 0



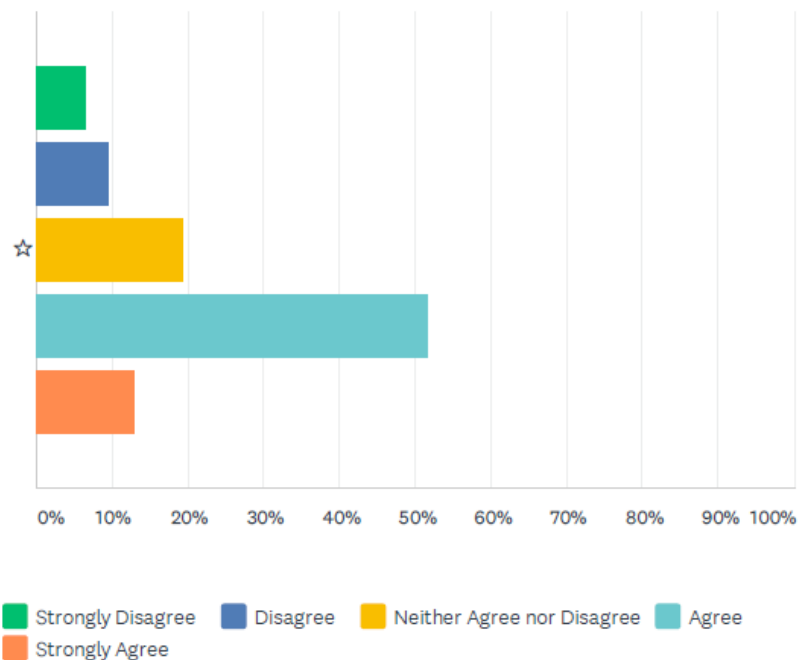
Q13 The fire and rescue services department is adequately resourced in heavy apparatus.

Answered: 31 Skipped: 0



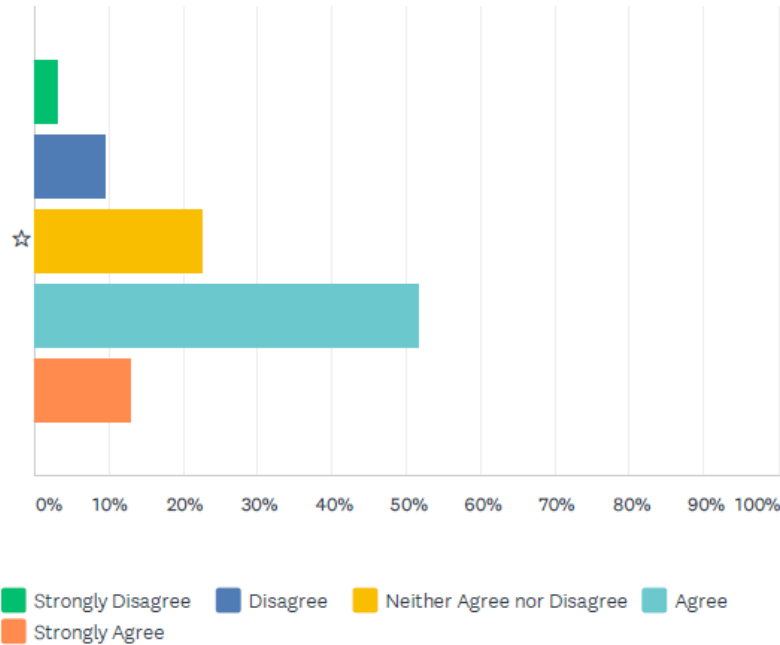
Q14 Heavy apparatus are appropriately life-cycled.

Answered: 31 Skipped: 0



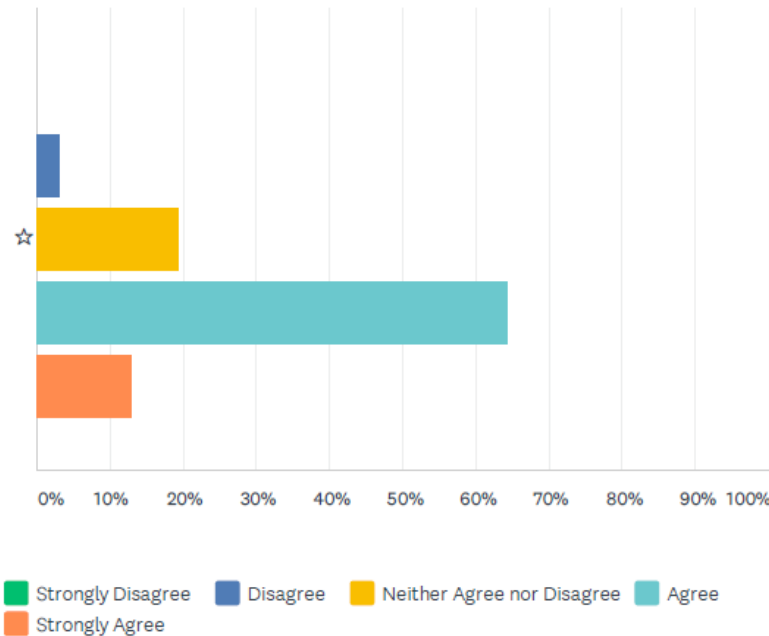
Q15 The fire and rescue services department is adequately resourced in light duty apparatus.

Answered: 31 Skipped: 0



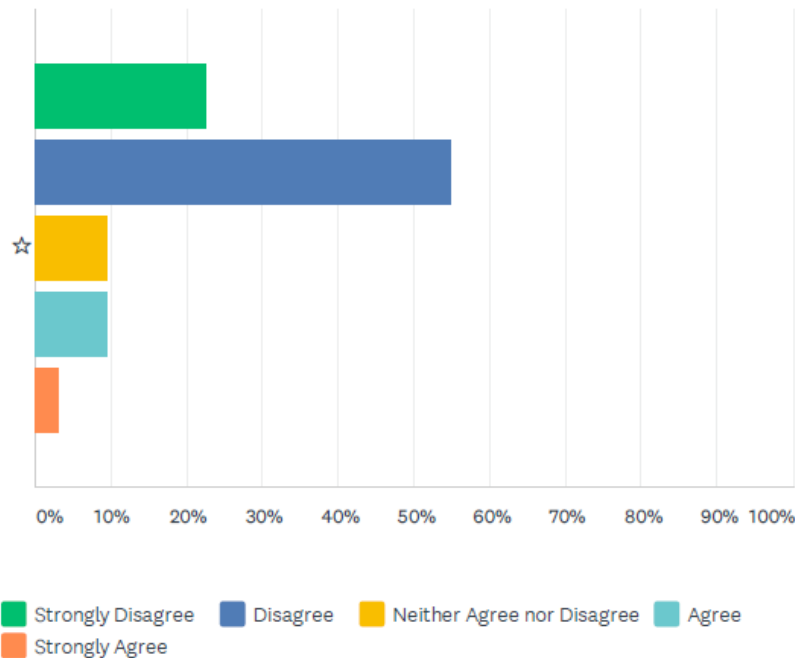
Q16 The fire and rescue services department is adequately resourced in small equipment.

Answered: 31 Skipped: 0



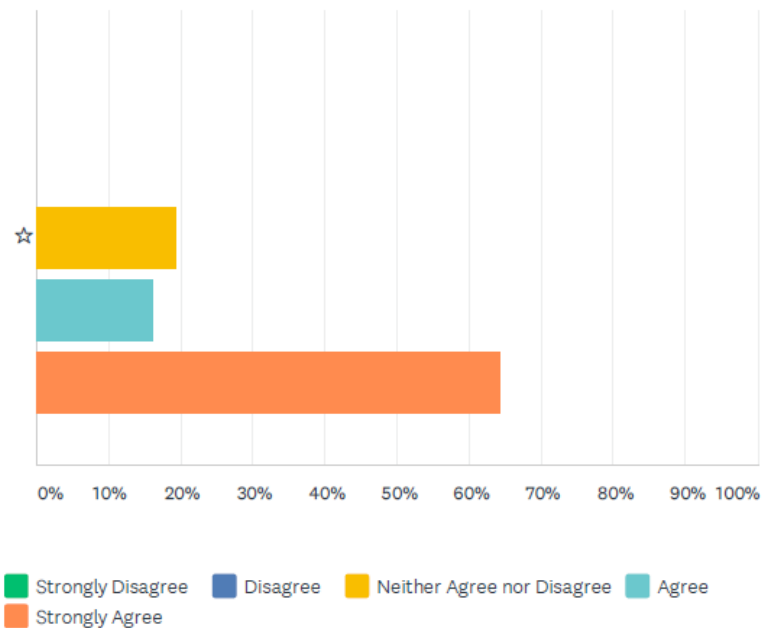
Q17 The current fire and rescue station is functional and meet the demands of the department.

Answered: 31 Skipped: 0



Q18 The proposed fire station site on 13th street will improve PFRS responses to emergencies.

Answered: 31 Skipped: 0



Q19 The department has kept pace with leading technology.

Answered: 31 Skipped: 0

