



GREENWOOD FIRE SERVICE REVIEW AND FIRE DEPARTMENT MASTER PLAN

Prepared for:

City of Greenwood

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GLOSSARY OF COMMON ABBREVIATIONS AND TERMS

Term	Definition
AHJ / Authority Having Jurisdiction	The organization that enforces regulations and standards for public safety in a given area.
BCAS / BC Ambulance Service	Provides pre-hospital care, managed by BC Emergency Health Services.
BCEHS / BC Emergency Health Services	Provides pre-hospital care, managed by BC Ambulance Service.
Dwelling Protection Grade / DPG	A fire department rating established by the Fire Underwriters and used by insurers to assess the level of fire protection available for single family residential properties.
EDMA / Emergency and Disaster Management Act	The Emergency and Disaster Management Act was tabled on October 3, 2023.
FR 3 / First Medical Responder Level 3	Entry-level medical training for work as a career firefighter.
FSA / Fire Safety Act	The Fire Safety Act replaced the Fire Services Act on August 1, 2024.
FUS / Fire Underwriters Survey	A function of the insurance industry that rates local government fire protection services.
GVFD	Greenwood Volunteer Fire Department
NFPA / National Fire Protection Association	Publishes fire safety codes and standards recognized as best practice in North America.
OFC / Office of the Fire Commissioner	Administers and enforces BC's fire safety legislation, and leads provincial fire reporting programs and establishes minimum training standards for firefighters, fire inspectors and fire investigators.
POC / Paid-on-Call firefighter	Auxiliary members paid hourly for training, attending calls and other duties.
Public Fire Protection Classification / PFPC	Evaluates the ability of a community's fire protection programs to prevent and control major fires that may occur in multi-family residential, commercial, industrial, institutional buildings, and course of construction developments.



1. EXECUTIVE SUMMARY

The City of Greenwood (the “City” or “Greenwood”) engaged Tim Pley & Associates Ltd. (“TPA” or the “Consultants”) to conduct a fire service review and develop a Fire Master Plan for Greenwood Volunteer Fire Department (“GVFD” or the “Department”).

Taking place over the latter half of 2025, project work included an in-depth evaluation of GVFD’s operations, resources, and documentation including bylaws, agreements and operational guidelines. An environmental scan of factors affecting or perceived to affect the Department was undertaken. That work including engaging with Greenwood’s Mayor and Council, several senior City managers, Department chief officers, the Department’s firefighters, and chief officers from neighbouring fire departments. Additionally, a town hall was held to update the community on the project.

The community of Greenwood was found to have a strong volunteer culture. That volunteer spirit was observed to also extend into the fire department, where members volunteer a considerable amount of their time and energy.¹ Preserving and leveraging that community spirit within the fire department is critical to future success.

The local government fire service has changed considerably over the past twenty years. GVFD was observed to have not, in some regards, made changes to its practices to keep up with external change drivers. This deferred development has resulted in the Department being out of compliance with minimum training standards, utilizing older methods for member recruitment and retention that are not effective in the modern era, having too few firefighters, no line officers (captains or lieutenants), and utilizing firefighting tools and techniques not fully adequate for the fires the Department can expect to encounter.

The City, as well as GVFD officers and firefighters, recognize the need for change within the Department, and should be commended for seeking external support in charting the path forward. The next few years will be a critical time for GVFD and the City, as changes are implemented. Efforts should be taken to ensure that all current members of the Department, and new members, have opportunity for meaningful contribution.

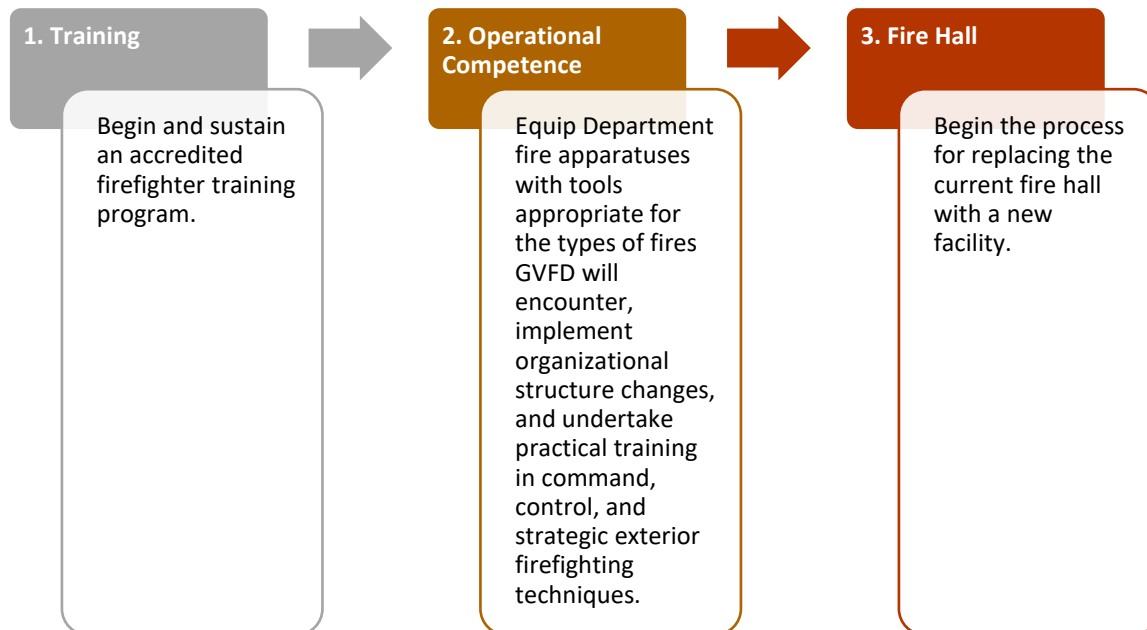
In 2024, a significant conflagration structure fire occurred in Greenwood. That fire demonstrated the potential for significant fire losses in Greenwood, and likely led the City to reconsider fire risk, and its readiness to mitigate fires. Council for the City of Greenwood, senior City staff, and the community recognized that GVFD had previously been under-resourced. The City has identified supporting GVFD as

¹ Local government fire protection services in rural BC have historically relied upon firefighters who were engaged on a volunteer basis, with those firefighters receiving no compensation for their services. Many local governments, Greenwood included, have begun to provide some compensation to formerly volunteer firefighters in recognition of their services. Consequently, those firefighters have become employees of the local government, no longer volunteers, and are properly described as paid-on-call (“POC”) firefighters. This report may use the terms Auxiliary, Volunteer, POC, or volunteer/POC synonymously to describe firefighters who are not full-time employees.



a strategic priority, increased its operating budget, and undertaken this review and master planning project to identify areas where support for the Department should be prioritized.

This report includes a number of recommendations. Three areas of priority include:



There are a number of specific recommendations in this report that support the three priorities listed above, as well as a number of others that are also highly critical to fire risk resiliency in Greenwood. Taken as a collective, recommendations in this report are intended to make GVFD safer and more effective over the short term, position the Department to be able to attract and retain new members, and make the community safer and more resilient through effective fire prevention and risk mitigation measures.

During all interactions with the City, GVFD personnel and community members, the Consultants were engaged openly and professionally, with all participants demonstrating their earnest willingness to contribute to the master planning process. We would like to express our thanks for all contributions, and our appreciation for the open communicative style of the community of Greenwood.

Nothing in this report should be construed as legal advice.

All stakeholders are encouraged to retain independent legal counsel where such action is warranted.

The City should review any recommendations or issues identified below through its ordinary legal review processes.



2. SUMMARY OF RECOMMENDATIONS

The following section summarizes the recommendations contained within the report. The more expansive discussion in the report contains details regarding each of these recommendations.

Recommendations contained within the report are summarized here, including recommended implementation timeframes:

- Short term: within 24 months, in some cases sooner
- Medium term: two to five years
- Long term: more than five years

Note that recommendations are not presented in order of priority.

Recommendation	Reco. #	Timeline
Ongoing		
The City of Greenwood should regularly monitor by way of quarterly and annual reports to Mayor and Council Greenwood Volunteer Fire Department's level of readiness and compliance with the <i>BC Structure Firefighter Minimum Training Standards</i> , including the number of officers and firefighters, their certification levels, and the Department's pre-fire planning program. <u>Section 6 – Services and Service Levels</u>	3.	Short term and ongoing
Short term		
The City of Greenwood should maintain the mandated Exterior Operations level of structure fire protection over the short term (2026-2028), and ensure that firefighters are adequately trained and resourced to operate at that level. <u>Section 6 – Services and Service Levels</u>	1.	Short term
The City of Greenwood should consider, with input from the Fire Chief, all emergency services mandated for provision by Greenwood Volunteer Fire Department and the levels to which each service is provided. <u>Section 6 – Services and Service Levels</u>	4.	Short term
Greenwood Volunteer Fire Department should work with Greenwood Public Works department to identify the maximum volume of water in the City's distribution system that is available for firefighting. <u>Section 6 – Services and Service Levels</u>	5.	Short term



Recommendation	Reco. #	Timeline
Greenwood Volunteer Fire Department should implement recommendations regarding firefighting equipment set out in the 2026 <i>Greenwood Fire Service Review and Fire Department Master Plan</i> report. <u><i>Section 7 – Apparatus and Equipment</i></u>	6.	Short term
The City of Greenwood and Greenwood Volunteer Fire Department should implement organizational and committee structures outlined in the 2026 <i>Greenwood Fire Service Review and Fire Department Master Plan</i> report. <u><i>Section 8 – Organizational Structure and Leadership</i></u>	9.	Short term
The City of Greenwood and Greenwood Volunteer Fire Department should ensure compliance with obligations set out in WorkSafeBC Act and Regulations, with regard to operating a fire department, and utilization of a Joint Occupational Health and Safety Committee. <u><i>Section 8 – Organizational Structure and Leadership</i></u>	10.	Short term
Greenwood Volunteer Fire Department should utilize social media accounts as recommended in the 2026 <i>Greenwood Fire Service Review and Fire Department Master Plan</i> report. <u><i>Section 8 – Organizational Structure and Leadership</i></u>	12.	Short term
The City of Greenwood and Greenwood Volunteer Fire Department should consider implementation of recruitment and retention measures outlined in the 2026 <i>Greenwood Fire Service Review and Fire Department Master Plan</i> report. <u><i>Section 9 – Fire Suppression Staffing</i></u>	13.	Short term
The City of Greenwood and Greenwood Volunteer Fire Department should monitor turnout for fire and alarms calls, calculate the 90% response ratio, and set Department roster targets accordingly to meet the NFPA 1720 standard of 15 firefighters 90% of the time. <u><i>Section 9 – Fire Suppression Staffing</i></u>	14.	Short term
The City of Greenwood should establish a Fire Department Guidance Working Group to support development of Greenwood Volunteer Fire Department, as outlined in the 2026 <i>Greenwood Fire Service Review and Fire Department Master Plan</i> report. <u><i>Section 10 – External Support</i></u>	15.	Short term



Recommendation	Reco. #	Timeline
The City of Greenwood and Greenwood Volunteer Fire Department should begin planning for replacement of the fire hall. <u><i>Section 11 – Fire Hall Facilities</i></u>	16.	Short term
In the event that the City of Greenwood opts to replace its fire hall, the City should also undertake some renovations of the current fire hall in order to address immediate needs during the fire hall planning and construction phases, which could involve several years. <u><i>Section 11 – Fire Hall Facilities</i></u>	17.	Short term
Greenwood Volunteer Fire Department should refresh Department Operational Guidelines, using third party guidance if needed, and establish a regular system of reviewing and renewing Operational Guidelines. <u><i>Section 12 – Operational Guidelines</i></u>	18.	Short term
Greenwood Volunteer Fire Department should adopt Department Operational Guidelines that meet the Department’s needs and are operationally consistent with Midway and Grand Forks fire departments. <u><i>Section 12 – Operational Guidelines</i></u>	19.	Short term
Greenwood Volunteer Fire Department should partner with Midway or Grand Forks fire department for that department to provide firefighter training and evaluation services in a sustainable program. <u><i>Section 13 – Training</i></u>	20.	Short term
Greenwood Volunteer Fire Department should create and fill a Training Administrator position. <u><i>Section 13 – Training</i></u>	20.	Short term
Greenwood Volunteer Fire Department should develop and implement a new risk-based compliance monitoring program, as required by the <i>Fire Safety Act</i>. <u><i>Section 14 – Fire Prevention</i></u>	22.	Short term



Recommendation	Reco. #	Timeline
The City of Greenwood should explore potential to access grant funding to enable the hiring of a FireSmart Coordinator <u>Section 14 – Fire Prevention</u>	23.	Short term
Greenwood Volunteer Fire Department (Fire Chief) should report annually to City Council on progress in the fire prevention division, including the number of fire inspections conducted and pre-fire plans developed relative to targets. <u>Section 14 – Fire Prevention</u>	24.	Short term
The City of Greenwood should create and fill a FireSmart Coordinator/Fire Inspector position, reporting to the Corporate Officer. <u>Section 14 – Fire Prevention</u>	26.	Short term
The Fire Chief should report regularly, at least quarterly, to Council for the City of Greenwood on the type and volume of calls for service, as well as Department response metrics. Council should continue to consider the services that Greenwood Volunteer Fire Department provides and the levels to which those services are provided. <u>Section 15 – Incident Response Data</u>	28.	Short term
The City of Greenwood should consider taking steps to bolster Greenwood Volunteer Fire Department’s capacity to respond to daytime calls for service, including encouraging its employees to serve in the fire department, and supporting those employees in doing so. <u>Section 15 – Incident Response Data</u>	29.	Short term
Greenwood Volunteer Fire Department should update the Department’s profile information via the Fire Underwriters Survey online portal. <u>Section 17 – Fire Underwriters Survey</u>	31.	Short term
The City of Greenwood should continue to be party to a revised mutual aid agreement with Midway and Grand Forks. <u>Section 18 – Aid Agreements</u>	34.	Short term
Medium term		



Recommendation	Reco. #	Timeline
Over the medium term (2028-2033) the City of Greenwood should consider increasing the level of structure fire protection from Exterior Operations to Interior Operations, taking into consideration the capacity of Greenwood Volunteer Fire Department to operate at that level within compliance of the <i>BC Minimum Structure Firefighter Training Standards</i> and other regulations. <i><u>Section 6 – Services and Service Levels</u></i>	2.	Medium term
The City of Greenwood and Greenwood Volunteer Fire Department should implement recommendations regarding apparatus set out in the 2026 <i>Greenwood Fire Service Review and Fire Department Master Plan</i> report. <i><u>Section 7 – Apparatus and Equipment</u></i>	7.	Medium term
The City of Greenwood and Greenwood Volunteer Fire Department should continue to innovate in endeavouring to maximize the working lives of fire apparatus, and the accredited value applied to those apparatuses by the insurance industry. <i>Note: this recommendation is the same as #32 found in Section 17.</i> <i><u>Section 7 – Apparatus and Equipment</u></i>	8.	Medium term
Greenwood Volunteer Fire Department should create and fill an Assistant Chief – Training position. <i><u>Section 13 – Training</u></i>	21.	Medium term
Greenwood Volunteer Fire Department should develop a pre-fire planning program, and engage firefighters to develop and update those plans under the supervision of a new Fire Inspector position. <i><u>Section 14 – Fire Prevention</u></i>	25.	Medium term
The City of Greenwood should create and fill an Assistant Chief – Prevention position, reporting to the Fire Chief. <i><u>Section 14 – Fire Prevention</u></i>	27.	Medium term



Recommendation	Reco. #	Timeline
When Bylaw No. 486 is updated, the City of Greenwood should address issues outlined in the <i>2026 Greenwood Fire Service Review and Fire Department Master Plan</i> report. <u><i>Section 16 – Regulatory Matters</i></u>	30.	Medium term
The City of Greenwood and Greenwood Volunteer Fire Department should continue to innovate in endeavouring to maximize the working lives of fire apparatus, and the accredited value applied to those apparatuses by the insurance industry. <i>Note: this recommendation is the same as #8 found in Section 7.</i> <u><i>Section 17 – Fire Underwriters Survey</i></u>	32.	Medium term
The City of Greenwood should enter into automatic aid agreements with Midway and Grand Forks. <u><i>Section 18 – Aid Agreements</i></u>	35.	Medium term
Long term		
The City of Greenwood and Greenwood Volunteer Fire Department should refresh the Fire Master Plan in year 2030 or sooner. <u><i>Section 8 – Organizational Structure and Leadership</i></u>	11.	Long term
After substantial progress has been made on implementing recommendations from the <i>2026 Greenwood Fire Service Review and Fire Department Master Plan</i> report, Greenwood Volunteer Fire Department should engage Fire Underwriters Survey to undertake a full review of Greenwood’s fire protection services. <u><i>Section 17 – Fire Underwriters Survey</i></u>	33.	Long term



3. PROJECT SCOPE AND METHODOLOGY

Council for the City of Greenwood has made support of the fire department a strategic priority. Accordingly, the Department operating budget was increased significantly in 2025 over the previous year, and a fire service review and master planning project undertaken to help the City understand where specifically budget funding and other supports should be allocated.

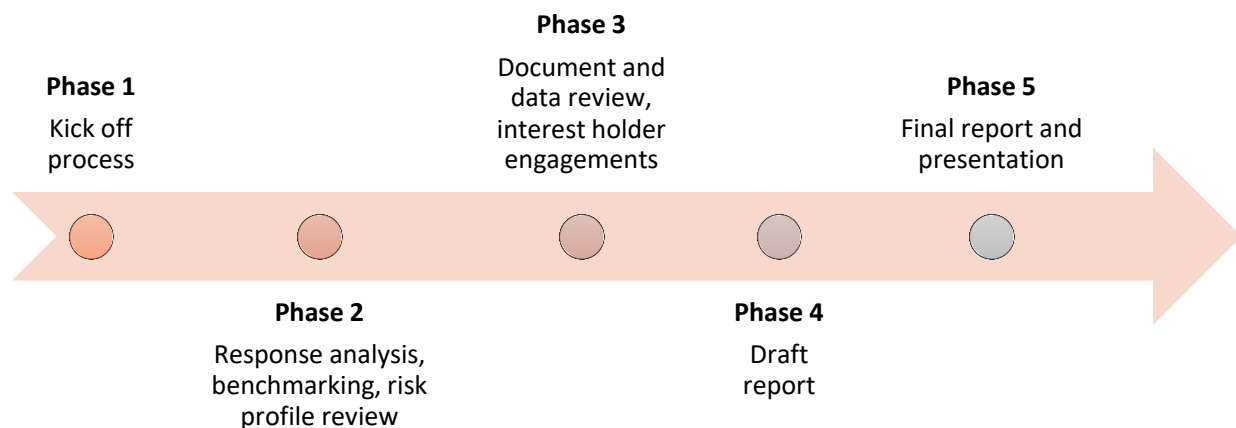
This report is intended to forecast strategic actions for the Department for the next two, five and 10 years, including a longer outlook.

The scope of the work and methodology included, but were not limited to:

- Conducting research and interviews with interest partners (Mayor and Council, City managers, Department officers and firefighters, and neighbouring fire chiefs) to identify gaps and opportunities;
- Review of City and Department documents, and calls for service over the previous six years;
- Review of Department apparatus, equipment, facility, and operational procedures; and
- Provision of a written report identifying challenges and opportunities, providing professional advice to close gaps and address the community's short, medium, and long term needs.

The final report is intended to identify options, and consider a sustainable and achievable approach to supporting the Department to provide services safely and meeting the City's needs.

Figure 1: Phased Methodology Approach



4. FIRE SERVICE TRENDS IN BC

GVFD is experiencing some challenges that are specific to the Department and others that are shared by other fire departments in BC. In some instances, however, GVFD has not yet been affected by matters that are substantially driving change in other BC jurisdictions.

In BC, fire departments are generally experiencing challenges related to:

- funding for a service that is experiencing costs increasing at rates greater than those of other local government services;
- societal and demographic changes that impact calls for service such as:
 - an aging population,
 - illicit drug use,
 - an unhoused or underhoused population.
- societal and demographic changes that impact availability of POC firefighters;
- the impact of regulatory changes, including WorkSafeBC requirements, the *BC Minimum Structure Firefighter Training Standards*,² as well as the recently adopted *Emergency and Disaster Management Act* (“EDMA”) and *Fire Safety Act* (“FSA”);
- application of requirements from agencies such as Fire Underwriters Survey (“FUS”) and the National Fire Protection Association (“NFPA”); and
- increasing volume of calls related to medical incidents (this is not affecting GVFD the same as it is in other BC jurisdictions).

Factors specifically affecting GVFD include:

- the size of Greenwood (population 700) affecting both the capacity to fund a fire department and representing a limited pool from which to draw volunteer firefighters;
- an aged fire hall recognized as needing replacement or significant renovation;
- an internal demographic gulf that is reflected in senior members who are likely near the end of their firefighting careers, and some less experienced firefighters; and
- an absence of line officers, with no clear succession plan.

² British Columbia Structure Firefighter Minimum Training Standards, issued by the Fire Commissioner. The most recently updated standards came into effect in September 2022.



5. WHAT WE HEARD

The Consultants conducted their on-site review and engagements over several days in August and October of 2025.

As part of the analysis which aims to examine the views of interest holders on the current situation in which the Department operates and is supported by the City, the analysis also identifies interest holders’ perceptions of what emerging matters will impact the delivery of fire protection services in Greenwood, and what that impact will look like.

The table below summarizes the input *received*, and does not represent recommendations made by the Consultants, which are summarized in [Section 2](#). In some cases, input listed below is contradictory to other input statements, indicating differing perspectives within the interest holder groups.

For this report TPA has used a variation of the traditional SWOT³ analysis format to summarize input received from a number of engagements with a range of interest holders. The *What? So What? Now What?* format for relating input from engagements reflects a less critical approach, better reflects the structured problem solving that took place in engagement sessions, and facilitates a strategic review of feedback that focusses best on solutions.

In the table below, the *What?* column represents interest holder input. The *So What?* column represents interest holder’s input with some contextual reframing from the Consultants, and the *Now What?* column represents a blend of interest holder input and the Consultant’s input on each issue. This reflects that interest holders definitely know what matters affect them, know with varying degrees the context surrounding each issue, but are not well-positioned to identify the best course of action with regard to those issues.

The inclusion in this section of inputs received from interest holders is important because it reflects the perceptions of participants, and it demonstrates to those interest holders that their input was captured and reflected in this report.

Inputs in Table 1 should be considered as being based on perceptions expressed by interest holders at the time of the interviews.

Table 1: What We Heard Analysis

What?	So What?	Now What?
Equipment	The Department sources used equipment where they can, resulting in numerous	Stop sourcing equipment by what can be acquired. Instead, document specifically what the Department needs, seek only

³ A SWOT analysis includes exploration of current Strengths and Weaknesses, and consideration of emerging matters that could be considered Opportunities or Threats.



What?	So What?	Now What?
	“orphaned” pieces of equipment – lack of consistency.	that, and discard orphaned equipment.
Apparatus	Department holds old apparatus that may be beyond useful service lives.	Develop an apparatus needs list, dispose of apparatus not on that list, acquire what is needed. A new Tender is needed.
Fire Hall	Fire hall is an awesome heritage building, not suitable to support a modern fire department. Some apparatus is currently stored across the street.	A new fire hall is needed. Begin planning now.
Records Management System (“RMS”) – hard copy system used	Absence of a digital records management system results in inability to provide reports to CAO, Council and community.	Explore the use of digital RMS available through Kelowna Fire Dispatch. Resist purchasing software that the Department can’t yet support.
Reporting between Department and City is limited	Volunteer nature of chief officer roles challenges regular interactions.	Develop electronic reporting systems.
Training – absence of in-house capacity	Certified training is critical. The absence of certified trainers/evaluators has resulted in a stalled training program, likely impacting recruitment and retention of members. Six members reported to have met Exterior Operations level criteria.	Partner with one or both neighbouring fire departments until internal training/evaluation capacity is developed.
Department culture and demographics are shifting	Changing membership leads to natural change in culture and operations. Some GVFD members are long-standing, and invested in established practices. Others want change.	Change is natural, and necessary. It is best if it happens incrementally. The Department could benefit from some external support to assist with effective change leadership, while some long-standing practices are preserved.



What?	So What?	Now What?
Fire Prevention – City has been contracting out inspections	New <i>Fire Safety Act</i> has brought changed responsibilities – City recently appointed Chief and Deputy as inspectors. Sixty inspectable properties.	Even before the <i>Fire Safety Act</i> , the City had fire inspection obligations. Fire inspection is administrative-heavy work. The City should develop a fire prevention/inspection position.
Older buildings on main street – considerable fire risk	These structures represent both the community's history/identity, and a significant risk of conflagration.	The City should take a multi-disciplinary approach, with fire inspection, bylaw services, and administration focusing efforts on fire safety.
Membership – roster of 17 members	Fire Underwriters Survey requires a minimum of 15 to be recognized as a fire department.	A strategic approach to recruiting and training is needed. Strong leadership and a plan are required.
City and Fire Department	Relationship used to be poor, much improved.	Still some references to “across the street” as Department members learn to let go of old grievances. Continue to develop mutual trust.
Organizational structure – absence of line officers (Captains)	This is reflected in chief and deputy being gate keepers. A command and control void at fire scenes was reported.	Organization structure needs to be developed. Practical experience needed for everyone in how command and control should function ... how to lead and how to follow.
External Communications	Recruitment is based in part on getting the message out as well as public perception of the organization.	The City recently established a Communications function – good opportunity to work in collaboration.
Service agreements	GVFD provides fire protection outside of the City under contract with Regional District of Kootenay Boundary (“RDKB”).	A revised agreement is needed. Consider how to address capital costs related to purchase and maintenance of a Tender to serve regional area.



6. SERVICES AND SERVICE LEVELS

In British Columbia, the Office of the Fire Commissioner (“OFC”) is mandated by the *Fire Safety Act* to establish minimum training standards for structure firefighters. That has been achieved by way of the *BC Structure Firefighter Minimum Training Standards*, last amended in 2022. Authorities Having Jurisdiction (“AHJs”)⁴ are obligated to determine by way of bylaw or policy the level at which structure fire protection service will be provided, and then ensure that the fire department(s) for which they are responsible meet the minimum training and other related obligations.

The *BC Structure Firefighter Minimum Training Standards* set out three levels of fire protection service and commensurate training. The City of Greenwood has determined by way of policy that GVFD will provide structure fire protection at the Exterior Operations level.

6.1 FULL SERVICE OPERATIONS LEVEL

Fire departments that operate at the Full Service Operations level, with training equivalent to National Fire Protection Association 1001 standard, can enter fire-involved structures, whether they be simple or complex. The *British Columbia Structure Firefighter Minimum Training Standards* defines:

- *Simple Structures* “as described in BC Building Code Part 9 – buildings of 3 storeys or less with maximum 600 square meters (6,500 square feet) of living space, or objects such as a vehicle, single family dwelling or other small structures.”
- *Complex Buildings* as “multi-storey, high-rises, commercial complexes, etc.”⁵

Full Service Operations differs from Interior Operations in terms of relatively minor training and certification differences, but primarily in the fire department’s capacity to reliably deploy the number of trained personnel (including incident command and other support functions), apparatus and equipment adequate to conduct fire suppression operations inside the most complex structures in the fire protection service area.

Full Service Operations level of service is commonly provided in urban communities where there are many complex structures. This level of service is provided by fire departments that can reliably field the necessary resources, often utilizing career firefighters, a combination of career and POC firefighters, or in some cases high functioning POC departments with no career firefighters. “These fire departments are organized such that fire suppression activities that occur are based on response protocols which include the appropriate staffing levels, and number and type of apparatus on scene.”⁶

6.2 INTERIOR OPERATIONS LEVEL

At the Interior Operations level, firefighters are permitted to enter “simple” fire-involved structures such

⁴ AHJs are governing bodies, often local governments such as cities, regional districts or improvement districts.

⁵ Ibid

⁶ Ibid, page 24



as single-family dwellings, outbuildings, and other structures that are smaller than 6,500 square feet in floor space area, and three or fewer storeys. Interior Operations level firefighters are also permitted to enter fire-involved “complex” structures if the Department has developed a pre-fire plan for that structure, the plan has been incorporated into the training program, and firefighters are familiar with the structure, its internal layout and systems, and the Department’s predetermined operational plan.

Interior Operations level of service is commonly provided in semi-rural or remote urban communities that include a limited number of complex structures, and where fire departments utilize POC firefighters.

6.3 EXTERIOR OPERATIONS LEVEL

At this, the lowest available level of structure fire protection service, firefighters are not permitted to enter any fire-involved structure or enclosed space. All fire suppression operations must be undertaken from the exterior of structures.

The Exterior Operations level of service is commonly provided in rural communities that utilize POC or volunteer firefighters. Distances between properties are often larger, response times longer, and the potential to save fire-involved structures is lower than in urban areas. Exterior Operations level firefighting focuses primarily on preventing the spread of fire to uninvolved structures.

6.4 SERVICE LEVEL CONSIDERATION – GREENWOOD

As noted above, the City has mandated that GVFD provide fire structure protection service at the Exterior Operations level.

With 60 inspectable properties,⁷ the Greenwood fire protection service area includes several complex structures. The number and type of complex structures in Greenwood arguably warrants a service level designation of Interior Operations, but the Department is currently not able to provide Interior Operations level of service. Factors such as a population of 700, and a Department roster of only 17 personnel, none of whom are trained for interior firefighting, limit the Department’s capabilities. Over the short term, GVFD should focus on achieving regulatory compliance and operational competency at the Exterior Operations level of service.

Fires in structures are best controlled by way of interior firefighting if conditions support such action.

Notwithstanding the benefit that an Interior Operations level of service could provide for Greenwood, the Department cannot achieve that level of operations during the short term. Over the medium term (two to five years), *if* the City and the Department can increase the Department’s fire suppression capacity, consideration can be given to increasing to Interior Operations level. Actions necessary to achieve this are outlined throughout this report.

⁷ As defined by the *Fire Safety Act*.



6.5 OTHER SERVICES AND LEVELS

Local government fire departments provide routine and emergency services additional to structure fire suppression. Table 2 below sets out services that the Department should provide, and recommended levels for each over the short and medium/long terms.

Table 2: Target (Recommended) Services and Service Levels and Timeline

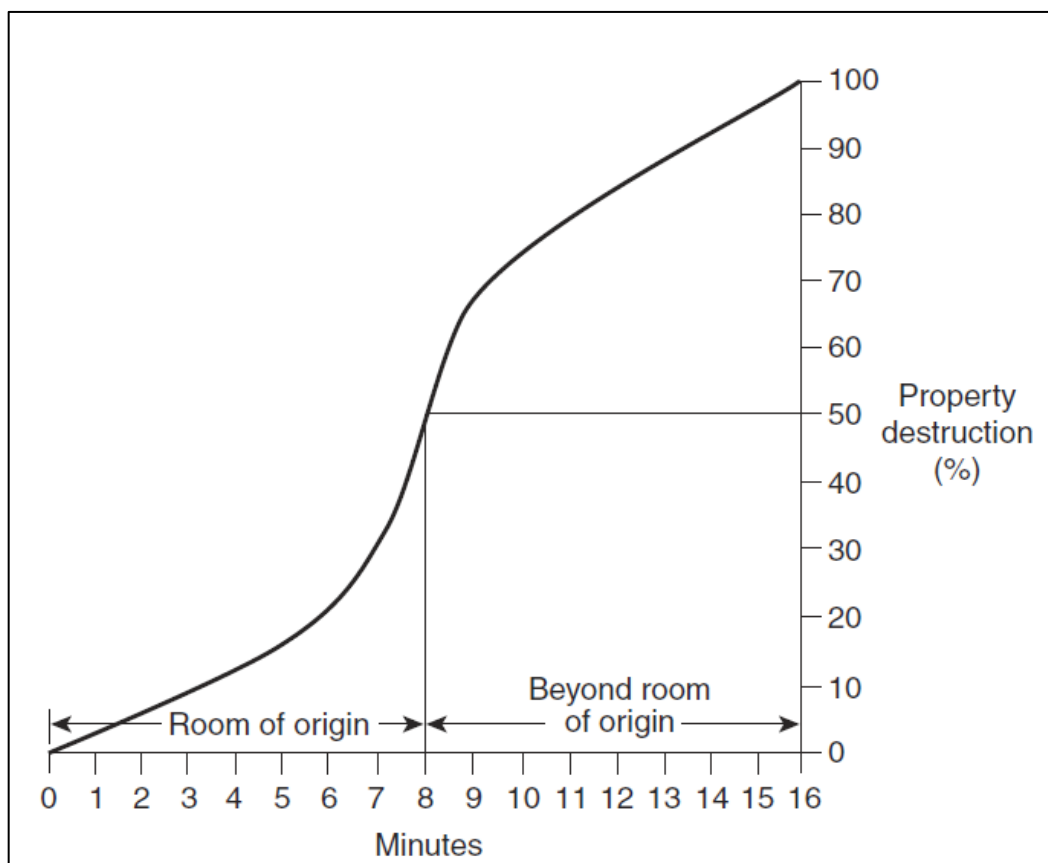
Service	Service Level Short Term	Service Level Medium/Long Term
Structure Fire Suppression	Exterior Operations	Interior Operations
Fire Inspection	Office of the Fire Commissioner training	Fire Prevention Inspector - I
Fire Investigation	Office of the Fire Commissioner training	Office of the Fire Commissioner training
Medical	First Responder 3	First Responder 3
Wildfire	FireSmart Coordination	FireSmart Coordination Operationally, S-100, S-185
Motor Vehicle Incident Response	Exterior Operations	NFPA 1001 – Automobile Rescue
Water Rescue	N/A	Awareness Level



6.6 PRACTICAL FIRE SUPPRESSION OPERATIONAL LEVEL

A fire propagation curve⁸ illustrated in Figure 2 below shows the exponential growth of fires in structures, and the commensurate percentage of property loss that occurs from the time a fire ignites to the time it extends beyond the room of origin. The curve shows that at or about eight minutes after ignition, a fire will “flashover” and extend beyond the room of origin, causing significantly more property damage and threatening the lives of people in other parts of a fire-involved building. Flashover increases the risk to occupants as well as to firefighters, materially increases the amount of resulting damage, and can lead to fire spreading to neighbouring structures.

Figure 2: Fire Propagation Curve⁹



The fire propagation curve demonstrates that if fire growth is not interrupted, the fire will quickly grow in size. As the fire grows, involving more and more fuel, the amount of water required to suppress that fire also increases. While a room and contents fire can be suppressed with a fire flow of 60 - 95 gallons per minute (“gpm”)¹⁰ delivered via a 1 ½ inch handline, a fully involved structure might require more

⁸ NFPA 1710

⁹ NFPA 1710

¹⁰ The acronym “gpm” is used throughout this report to signify “gallons per minute”, a water flow metric commonly used in the fire service. Because most fire nozzles and fire apparatuses are manufactured in the U.S., gpm values are in U.S. gallons unless stated otherwise.



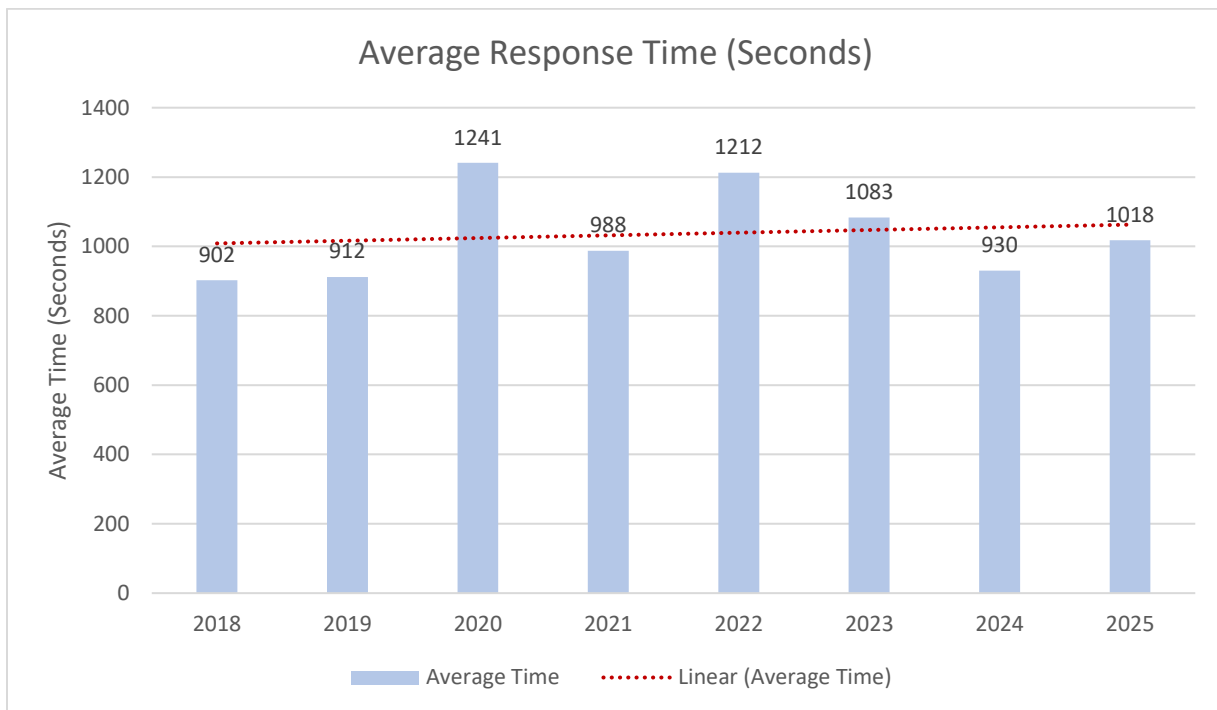
than 1,000 gpm to suppress.

On May 10, 2024, GVFD respond to a fire involving St. Judes Church and an adjacent former school building. With approximately 2500 square meters (almost 30,000 square feet) of structure fully fire-involved in that incident, an estimated 3,000 to 6,000 gpm would have been required to suppress that fire. For context, the City's newest fire engine is rated to pump 1,250 gpm.

When a fire department cannot arrive quickly and suppress a fire while it is relatively small, the fire department will encounter larger fires that require large volumes of water to control and suppress.

Figure 3 below shows the average GVFD response times by year, from 2018 to 2025. This indicates that on average, GVFD arrives at fires and other emergencies approximately 1000 seconds (16+ minutes) after being paged out to those incidents.

Figure 3: GVFD Average Response Times – All Incidents, 2018-2025



Based on GVFD's average response times, GVFD can expect and should prepare to encounter fully involved structure fires that will require the strategic application of large volumes of water to control and suppress. GVFD should focus on becoming a fire department that can move, and strategically apply large volumes of water from positions that keep personnel safe. The next section discusses some equipment that GVFD should acquire and put into service to support safe and effective exterior firefighting operations.

GVFD reported previous firefighting operations not being impacted by limited water supply from the City's water distribution system, despite that system being made up predominantly of 4-inch distribution pipes (8-inch or larger would be more common). GVFD likely has not encountered water supply



challenges in the past because department operations do not involve the use of multiple high-volume handlines and appliances. Put another way, the City's water supply system, while limited, has more capacity to deliver water than GVFD has been able to take advantage of to date.

The Department should:

- Work with the City's Public Works department to first estimate and later ground truth the maximum volume of water available for firefighting.
- Then, the Department should reconfigure its apparatuses with the hoses, nozzles and equipment identified in this report.
- Lastly, the Department should practice repeatedly, to become proficient in moving large volumes of water, and directing that water effectively, from safe locations, onto fire-involved structures.

6.7 RECOMMENDATIONS – SERVICES AND SERVICE LEVELS

Recommendation		Timeline
1.	The City of Greenwood should maintain the mandated Exterior Operations level of structure fire protection over the short term (2026-2028), and ensure that firefighters are adequately trained and resourced to operate at that level.	Short term
2.	Over the medium term (2028-2033) the City of Greenwood should consider increasing the level of structure fire protection from Exterior Operations to Interior Operations, taking into consideration the capacity of Greenwood Volunteer Fire Department to operate at that level within compliance of the <i>BC Minimum Structure Firefighter Training Standards</i> and other regulations.	Medium term
3.	The City of Greenwood should regularly monitor by way of quarterly and annual reports to Mayor and Council Greenwood Volunteer Fire Department's level of readiness and compliance with the <i>BC Structure Firefighter Minimum Training Standards</i> , including the number of officers and firefighters, their certification levels, and the Department's pre-fire planning program.	Short term and Ongoing
4.	The City of Greenwood should consider, with input from the Fire Chief, all emergency services mandated for provision by Greenwood Volunteer Fire Department and the levels to which each service is provided.	Short term
5.	Greenwood Volunteer Fire Department should work with Greenwood Public Works department to identify the maximum volume of water in the City's distribution system that is available for firefighting.	Short term



7. APPARATUS AND EQUIPMENT

7.1 APPARATUS

The City took possession in 2025 of a used 2018 fire engine, and at the time of the review for this report, was in the process of outfitting that unit for integration into the GVFD fleet. With that engine now fully operational, the fleet consists of apparatuses outlined in Table 4 below.

Fire apparatus fleet configuration is driven by two primary factors:

1. Insurance Industry Standards
2. Operational needs.

7.1.1 Insurance Industry Standards

Fire Underwriters Survey (“FUS”) generally recommends that fire engines in small communities be transferred to reserve status after 15 years of frontline service and replaced at 20 years due to the tremendous amount of mechanical stress these vehicles are subjected to and the shortage of parts over their expected lifespan.¹¹ NFPA 1901 - *Standards for Automotive Fire Apparatus*, ULC - *Standard S515* also provides input on the working life spans of fire apparatus.

Additionally, elevating/ladder apparatus begin to attract decreasing credit for insurance grading purposes after 20 years in age, and receive little to no credit at 25 years (see Table 3). FUS recommends that to maintain credit, elevating/ladder apparatuses should be less than 20 years in age.

GVFD does not currently operate an elevating/ladder apparatus.

FUS provides for local governments in small-sized cities (fewer than 30,000 population) to utilize fire engines as first-line responders up to 20 years of age, potentially as second-line apparatus between 20 and 25 years of age, and up to 30 years of age in a reserve capacity.¹² Any local government considering extending the lives of fire apparatus beyond 15 years in a first-line capacity should have those units assessed by a qualified third party, continue to assess the condition and reliability on an annual basis, provide dependable second line/reserve status apparatus, and ensure that a funding plan is in place to replace fire apparatus if the need becomes evident.

¹¹ Fire Underwriters Survey, “Insurance Grading Recognition of Used or Rebuilt Fire Apparatus,” (Undated~2014), Table 1: Service Schedule for Fire Apparatus for Fire Grading Purposes, at p. 2/8, available at Source: [PUBLIC PROTECTION SURVEY INFORMATION \(fireunderwriters.ca\)](https://www.fireunderwriters.ca/publication/survey-information)

¹² Ibid



Table 3: Service Schedule for Apparatus for Fire Insurance Grading Purposes (Fire Underwriters Survey)

Apparatus Age	Major Cities ³	Medium Sized Cities ⁴	Small Communities and Rural Areas ^{5,6}
0 – 15 years	First-line duty	First-line duty	First-line duty
16 – 20 years	Reserve	Second-line duty	First-line duty
20 – 25 years ¹	No credit in grading	No credit in grading Or Reserve ²	No credit in grading Or Second-line duty ²
26 – 29 years ¹	No credit in grading	No credit in grading	No credit in grading
30 years +		Or Reserve ²	Or Reserve ²
	No credit in grading	No credit in grading	No credit in grading

¹ All listed fire apparatus 20 years of age and older are required to be service tested by a 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 areas conditionally, when apparatus condition is acceptable and apparatus successfully passes required testing.

³ Major Cities are defined as communities that have:

- a total population of 100,000 or greater within the fire protection jurisdiction.

⁴ Medium Communities are defined as communities that have:

- a total population of 30,000 – 99,999 within the fire protection jurisdiction.

⁵ Small Communities are defined as incorporated or unincorporated communities that have:

- a total population of 1,000 – 29,999 within the fire protection jurisdiction,

⁶ Rural Areas are defined as incorporated or unincorporated communities that have:

- a total population of less than 1,000 within the fire protection jurisdiction.

7.1.2 Operational Needs

GVFD operates two fire engines, one tender truck, and one utility truck, as outlined below in Table 4 with replacement considerations noted.



Table 4: GVFD Firefighting Fleet with Replacement Timeline Considerations

Call Sign	Type and Year	Current Use	FUS Replacement Schedule	Notes
Engine 342	2018 International Workstar Engine	Front Line Engine	2048	GVFD should consider moving this unit to second line after 15 years (2033), and not later than 20 years (2038), after which it could serve in second line and reserve capacities until 2048. 2037 (or sooner) could be a target date for reassignment to second line status, given that Engine 341 ages out of reserve capacity that year.
Engine 341	2007 International Engine	Second Line Engine	2037	Engine 341 could serve in second line capacity until 25 years of age (2032), after which it could serve a further 5 years (2037) in reserve capacity.
Tender 341	1993 International	Tender	N/A	While FUS does not require replacement of tender trucks based on age, Tender 341 was observed to be 33 years old. Given that is the only tender apparatus in the GVFD fleet, and is relied upon as the primary water source for fire protection in non-hydrant protected areas, it should be replaced with a modern unit asap.
Utility 341	2004 Ford 350 4x4	Utility/ Medical/ Bush	N/A	This unit was observed to be providing service across a range of call types. It should be inspected, and based on that inspection, a replacement date should be identified. Utility vehicles can be replaced with used rather than new vehicles.

Replacement dates anticipated in Table 4 above are predicated on the continued maintenance and inspection of each unit, and their continued ability to provide uninterrupted service.

If the Department is holding any apparatus outside of those listed in Table 4, disposal of those units should be considered.

When apparatus listed in Table 4 are replaced, they should be removed from the fleet.



The Department should consider adding the following apparatus to the fleet:

- Command Vehicle - Duty Officer: Duty Officer trucks are generally pick-up trucks equipped with lights and sirens, and used by designated Duty Officers to respond directly to emergency scenes where they can conduct size-up and initiate an incident command system.
- Type 3 Engine: Type 3 Engines are designed as crossover units, used by structure firefighters to protect structures from wildfires. The City should consider adding a Type 3 Engine to GVFD *only after* the Department has achieved Interior Operations level capacity and the City has authorized that level of service, and *only after* a new fire hall has been constructed.

The City should continue to be innovative in the purchase and management of fire apparatus. Purchasing good used apparatus, and seeking FUS lifespan extensions is a creative way to manage the impacts of rising fire apparatus costs. However, operating older apparatus can result in service interruptions or unforeseen repair costs. The City should establish an Equipment Replacement Reserve Fund or similar process by which it can make annual contributions to the ongoing replacement of fire apparatus. That reserve fund should hold adequate funds to undertake major repairs in the event that a fire apparatus experiences such a failure, understanding that older apparatuses are more likely to require significant repairs.

There was some discussion during engagement sessions about adding a Type 3 fire engine (utilized for forest fires) or a bush truck (heavy pick-up truck or 5500 unit for forest fires). As noted above, given the Department's priority needs related to training, recruitment and retention, and a new fire hall, it should not pursue a bush truck or Type 3 Engine in the short term. One of those units could be considered in the medium term provided that the Department first achieves the more urgent priorities noted above.

After the City has constructed a new fire hall, it should consider operating a third (reserve or second line) engine in order to provide depth to its fleet. That third engine unit could be a Type 3 engine.

In summary, GVFD should consider the following fleet management measures:

- Set a GVFD standard of operating Engines for 15 - 20 years in front line capacity, and a further 10 years in second line or reserve Engine status, in order to ensure reliability of performance, fleet depth, and appropriate asset management;
- Configure all Engines similarly for operational effectiveness (see Equipment section below);
- Consider removal from the fleet of all apparatus not in Table 4 above;
- Operate one second line or reserve Engine;
- Operate one Tender truck;
- Operate Command and Utility vehicles as needed;
- Consider adding a Type 3 Engine to the fleet for wildland firefighting (after achieving Interior Operations level of operation and construction of a new fire hall).



7.2 EQUIPMENT

Equipment topics covered below are included in this report to enhance firefighter safety and operational effectiveness, as well as to enhance interoperability between GVFD and its partners in Midway and Grand Forks.

GVFD has a long history of innovative procurement. The Consultants reviewed a document trail outlining the Department's practice of sourcing donated fire apparatus, and were also informed by current Department members about how they actively source out donated equipment, from nozzles to breathing apparatus. Fire apparatuses were observed to be outfitted with a mixture of equipment that reflects the Department's procurement practices. The fire hall was also observed to be storing a range of equipment, some donated, that has not been placed into service.

A 2010 third-party Inspection and Audit report noted "the lack of housekeeping and pride in the two fire halls was appalling."¹³ In contrast to the 2010 report, TPA observed considerable pride among the GVFD membership. However, the fire hall and auxiliary building were observed to house various clusters of firefighting equipment not currently in use. Much of this equipment should be discarded to prevent it inadvertently being placed into service, and to support tidying of the fire hall.

The report section above outlined the need for the Department to be strategic in procuring and operating the apparatus it needs, and discarding all other apparatus. Likewise, the Department should fundamentally change the way in which it procures equipment. Rather than sourcing the best equipment it can find free or at low-cost, the Department should identify the equipment it needs, and only procure that equipment, still looking for used equipment where it is in good repair and aligns with identified needs. The Department should have less equipment, that equipment should be consistent across all apparatuses, and the fire hall should not be used to store orphaned or discontinued equipment.

Department apparatus was observed to be outfitted in several ways inconsistent with the level of fire protection that the Department is mandated to provide. GVFD is an Exterior Operations level fire department, meaning that firefighters can expect to be placed in fixed, exterior positions from which they will be delivering large volumes of water to control fires and prevent transfer of fire to combustible exposures. The City of Greenwood is served by a municipal water system complete with fire hydrants strategically located throughout the City. Even though the City's water supply system includes some 4-inch supply lines, it is capable of supplying 1,000 or more gpm. The Department should configure its apparatuses and equipment to deliver large volumes of water with minimum manpower requirements, making fullest possible use of the available water supply.

¹³ *Volunteer Fire Service Inspection and Audit – Greenwood City Volunteer Fire Department*, Firewise Consulting, 2010. Note: GVFD operates one fire hall and an auxiliary apparatus storage structure.



7.2.1 Self Contained Breathing Apparatus

GVFD currently utilizes self contained breathing apparatus (“SCBA”) featuring aluminum air bottles, with an operating pressure of 2200 psi. New SCBA feature composite wrapped air bottles that operate at 4500 psi, providing considerably more breathing air with weights comparable to current SCBA units.

One benefit of aluminum SCBA bottles is that they can have indefinite lifespans, provided that they pass regular non-destructive (hydrostatic) testing. Composite wrapped bottles also require regular hydrostatic testing, but the maximum lifespan of composite wrapped bottles is 15 years.

Notwithstanding the cost effectiveness of aluminum air bottles, GVFD should upgrade all of its SCBAs to use composite air bottles operating at 4500 psi. The Department should consider forty-five or sixty-minute bottles in order to provide the maximum amount of breathing air to its firefighters. Given that GVFD firefighters will be deployed outside of fire-involved structures, often in fixed positions, they should be able to remain in those positions for longer periods of time than if they were actively interior firefighting. The Department’s SCBA equipment should support such operations.

Concerns were expressed about the additional weight of 60-minute SCBA bottles. As a starting point, the Department should weigh its SCBA units currently in use, and compare that weight to new composite wrapped options.

SCBA units are expensive. GVFD should consider its SCBA needs, not based on how many SCBA units it currently has, but on how many it needs to staff two Engines and scene support positions.

GVFD should endeavour to maintain interoperability with Midway and Grand Forks fire departments, including in the make and model of SCBA.

The capacity of the Department’s SCBA air filling equipment to operate at a higher output pressure will need to be considered.

7.2.2 Large Diameter Supply Hose

The City’s water distribution system uses a mix of pipe sizes ranging from 4 to 8 inches. While 4-inch distribution pipes are adequate to supply potable water to residences and commercial buildings, they are undersized to provide water in large volumes for firefighting purposes. Notwithstanding the foregoing, Grand Forks Fire Department reported that in 2024, when Grand Forks’ ladder truck was deployed at a large structure fire, Greenwood’s water supply was sufficient to support ladder truck operations (500 - 1,000 gpm) as well as other hose lines.

As the volume of water flowing through a pipe or hose increases, contact between the moving water and the walls of the pipe or hose results in a drag effect known as friction loss¹⁴. Friction loss increases significantly in pipes and hoses with increased volume of water passing through. As friction loss

¹⁴ Friction loss is the energy (pressure) lost as a fluid (like water) moves through a pipe, hose, or duct, caused by resistance from the fluid's viscosity and its interaction with the inner walls and fittings.



increases, the volume of water able to pass through the pipe or hose decreases. Understanding and managing friction loss is a primary factor in moving large volumes of water through pipes or hoses.

An Exterior Operations level fire department with response times like GVFD's, can expect to encounter fully involved structure fires, and require large volumes of water to control those fires and protect other structures at risk. It would not be unusual for 1,000 gpm or more to be required.

Friction loss (and reduced water flow) downstream from a fire hydrant is influenced by three primary factors:

1. Diameter of fire hose
2. Length of fire hose
3. Volume of water passing through fire hose.

GVFD currently utilizes 2 ½ inch hose for supply lines (hoses used to transport water in high volumes from a fire hydrant to a fire engine located at the fire scene). Supply hose lays can be 300+ feet, depending on hydrant location in relation to the fire scene. Many local government fire departments have moved away from using 2 ½ inch hoses for water supply, instead utilizing large diameter hoses (4- or 5-inch diameter hose).

Moving water from a hydrant to a fire engine is dependent on the municipal distribution system's ability to propel (push) that water through the hydrant supply hose. A fire engine cannot draw (pull) water through a hydrant supply hose. GVFD faces a confluence of challenges with regard to water supply. As noted, the delivery capacity of Greenwood's water distribution system is limited by water main diameter. Maximizing access to the available volume of water is imperative.

Challenges will be encountered when attempting to flow large volumes of water, as considerable friction loss will occur within the water distribution system at high volume flows. Pressure at the hydrant when water is flowing at high volumes (flow pressure) will be considerably lower than the system's normal operation pressure (static pressure) as a result of friction loss in the underground pipes. Friction loss will also occur between the hydrant and the fire engine, resulting in even less water being available at the Engine than is available at the hydrant.

Long distances between fire hydrants in some areas will result in the use of long hydrant supply lines, further inhibiting the flow of water.

One relatively simple improvement for GVFD is to begin utilizing large diameter (4-inch) supply hose. One 4-inch hose can support the flow of more water than two 2 ½ inch hoses, with less friction loss.

Table 5 below indicates rule of thumb friction losses for various flows (volumes) of water, in a 100-foot length of fire hose.



Table 5: Friction Loss in Fire Hoses (per 100 feet of hose)

Flow (Volume) in gpm	Friction Loss (psi) in 2 ½ Inch Hose	Friction Loss (psi) in 4 Inch Hose
200	8	0.8
400	32	3.2
800	128	13
1000	200	20

Table 5 demonstrates that when high volumes of water are required, friction loss in 2 ½ inch supply hose limits available volume, leading to the need to add a second supply line. At higher flow volumes, friction loss in one 4-inch supply line is considerably lower than in two 2 ½ inch hoses.

The dramatic difference in friction loss is the primary reason large-diameter hose (“LDH”) like 4-inch is used for high-volume water supply operations. Use of 4-inch supply hose will result in increased volumes of water available for firefighting, aligning with other recommendations in this report to help GVFD be an effective Exterior Operations level fire department.

7.2.3 1 ¾ inch handlines

Given that GVFD is an Exterior Operations level fire department that utilizes POC firefighters, and the Department has a proven 16+ minute response time to fires and other emergency incidents, it can be expected that the Department will encounter fully involved structure fires, and will need to deliver large volumes of water to control and prevent the spread of those fires to other structures. For that reason, the Department should consider increasing the size of its preconnected handlines from 1 ½ inch diameter to 1 ¾ inch diameter.

Variable gallonage fire nozzles for 1 ½ inch handlines, as used by GVFD, generally enable the user to select the flow, ranging from 30, 60, 95, or 125 gpm. These handlines and flow rates are suitable for interior firefighting, where firefighters seek to suppress single room and content fires. 1 ½ inch handlines are better for moving around tight corners in structures than are larger dimension fire hoses.

In the case of GVFD, fires can be expected to grow significantly before the arrival of firefighters, and GVFD firefighters will establish exterior positions from which they will need to flow large volumes water. Variable gallonage fire nozzles for 1 ¾ inch handlines typical have flow selections of 100, 125, 150 and 200 gpm, considerably higher volumes than nozzles for 1 ½ inch fire hose. While nozzle reaction (which is primarily determined by flow rate and nozzle pressure) is greater at these higher volumes, Exterior Operations level firefighters typically remain in fixed positions, from which they will be better able to manage nozzle reaction.

GVFD should utilize 75 psi (rather than 100 psi) 1 ¾ inch nozzles, to best align pumping pressures with other devices in use.



Table 6: Performance Comparison Between 1 ½ and 1 ¾ Inch Handlines

Feature	1 ½ inch fire hose	1 ¾ inch fire hose
Typical flow rate	Selective gallonage fog nozzles typically have settings of 60, 95 or 125 gpm, depending on pressure and other factors.	Can produce up to 200 gpm, depending on pressure and other factors.
Increased volume	Considered a lower-volume, lightweight option that is easily maneuvered.	The larger diameter can increase water output by up to 40% compared to a 1 ½ inch hose.
Friction loss	As water passes through the hose, it creates friction that reduces pressure. With a smaller diameter, more pressure is lost to friction, reducing the flow rate.	The wider diameter allows for less friction loss, enabling higher flow rates for the same amount of pump pressure.
Maneuverability and weight	Lighter and easier to handle, especially for a single firefighter.	Heavier than a 1.5-inch hose. An empty 100-foot section can weigh about 5 pounds more.
Usage	Well suited for interior firefighting, as it provides adequate flows to control room and contents fires, while maximizing mobility.	Well suited for exterior firefighting where firefighter positions are fixed, and mobility is not constrained by doorways, stairs or furniture

7.2.4 Rapid Attack Ground Monitor

Timely delivery of large volumes of water, with precision, is critical in controlling structure fires. GVFD apparatuses include truck-mounted master stream monitors design to deliver 500 - 1,000 gpm. In many cases though, fire engines cannot be positioned where the truck-mounted monitor can be utilized effectively. In these cases, a pre-connected rapid attack ground monitor is ideal.



Figure 4: Elkhart Ram Rapid Attack Monitor <https://elkhartbrass.com/products/monitors/manual-monitors/ram-xd/>



There are several makes and models of rapid attack ground monitors. They generally feature:

- Rapid deployment when mounted to a preconnected 2 ½ inch hose line
- Deployable by one firefighter
- Handsfree operation, once set up
- Ability to deliver up to 500 gpm with as little as 9 psi friction loss (in the appliance).

GVFD should purchase and deploy two rapid attack monitors, one on each of the Department’s engines. Purchases can be staggered over two or more years, provided that the first unit is obtained in 2026.

7.3 RECOMMENDATIONS — APPARATUS AND EQUIPMENT

Recommendation		Timeline
6.	Greenwood Volunteer Fire Department should implement recommendations regarding firefighting equipment set out in the 2026 <i>Greenwood Fire Service Review and Fire Department Master Plan</i> report.	Short term
7.	The City of Greenwood and Greenwood Volunteer Fire Department should implement recommendations regarding apparatus set out in the 2026 <i>Greenwood Fire Service Review and Fire Department Master Plan</i> report.	Medium term
8.	The City of Greenwood and Greenwood Volunteer Fire Department should continue to innovate in endeavouring to maximize the working lives of fire apparatus, and the accredited value applied to those apparatuses by the insurance industry.	Medium term

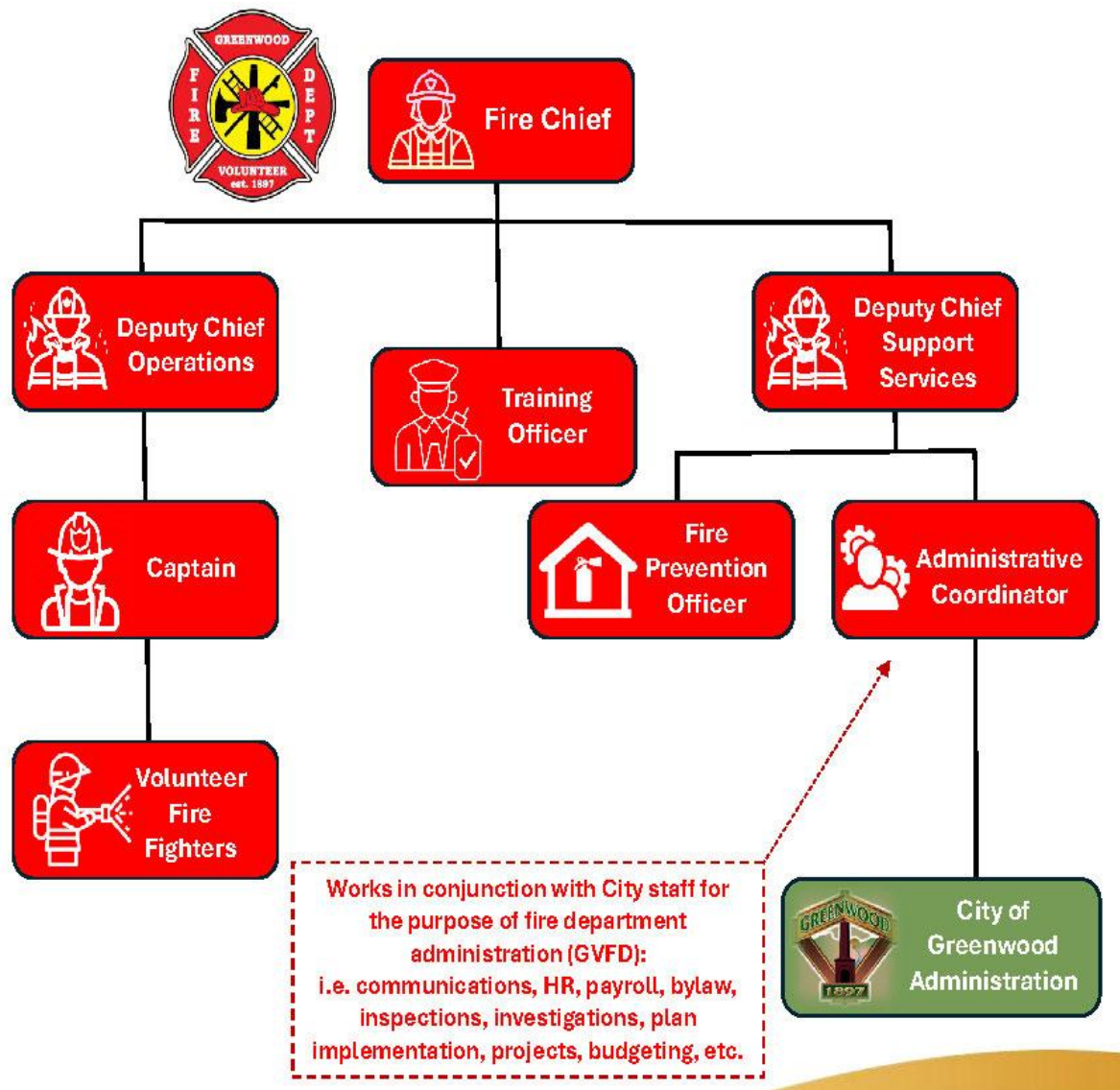


8. ORGANIZATIONAL STRUCTURE AND LEADERSHIP

8.1 CURRENT AND RECOMMENDED ORGANIZATIONAL STRUCTURE

GVFD utilizes an organizational structure that centralizing authority and responsibility primarily within two positions, the Fire Chief and Deputy Fire Chief. Figure 5 identifies an aspirational organizational structure that was not observed to be in practice in a number of instances.

Figure 5: Greenwood Volunteer Fire Department Organizational Chart¹⁵

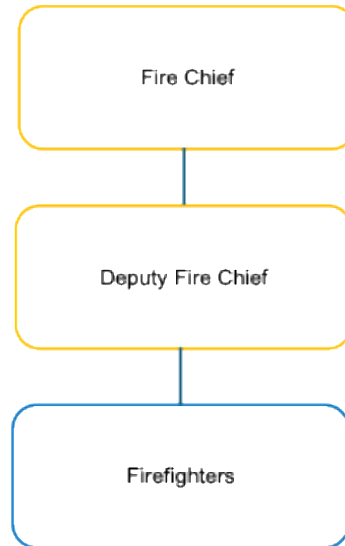


¹⁵ Greenwood Fire Service 2025 Business Plan



The organizational chart found to be in effect is outlined in Figure 6 below, indicating centralization of authority and responsibility.

Figure 6: Current Observed Organizational Chart



Several figures below outline recommended organizational charts over the short, medium and long terms, intended to demonstrate that some steps should be taken in the short term, and other steps taken later, as capacity allows.

Figure 7: Proposed GVFD Organizational Chart – Short Term

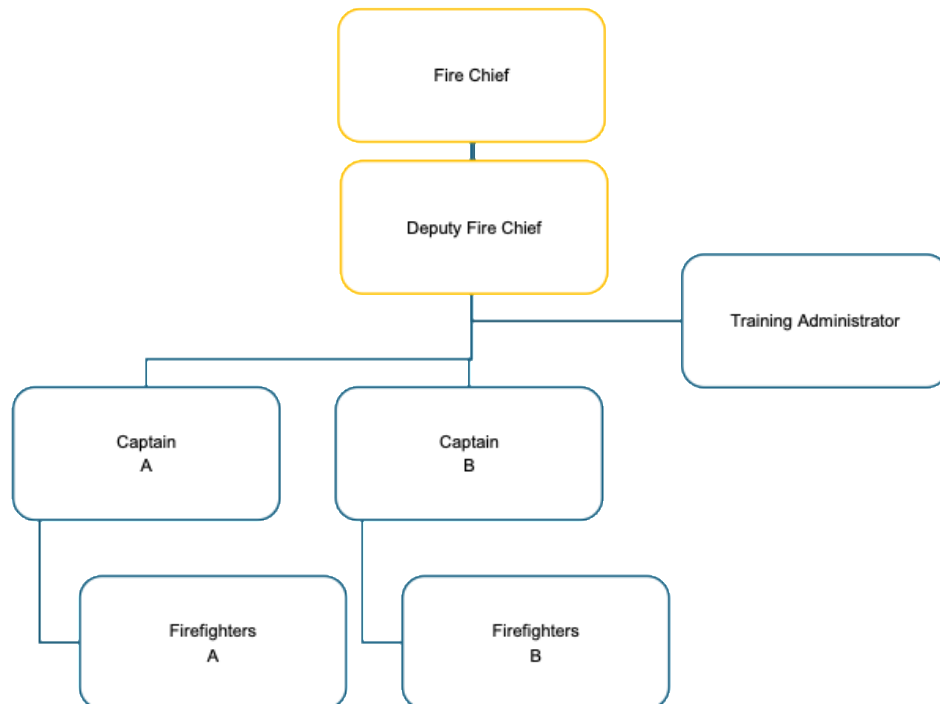


Figure 7 above shows that, in the short term, the Department should create and fill two Captain positions. Each Captain should be responsible for supervising 50% of the Department's firefighters.

A Training Administrator position should be created and filled. In the short term, the Training Administrator should not be an officer position, but rather an administrative function, supporting training provided by external trainers.

Figure 8 below indicates the way in which the Fire Department should report to and interact with the City during the short term.

Figure 8: Proposed GVFD - City Organizational Chart – Short Term

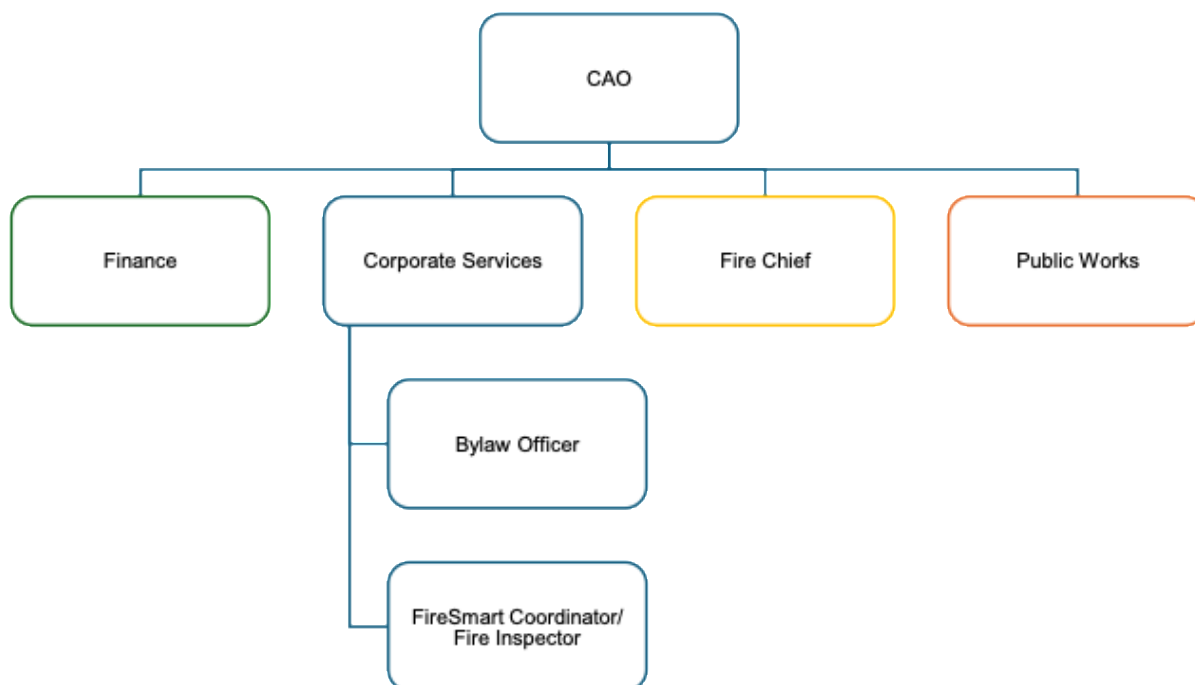


Figure 8 above outlines the Fire Chief continuing to report to the CAO, as a member of the City's senior leadership team. A new position, FireSmart Coordinator/Fire Inspector is recommended to be created, reporting during the short term to the Manager of Corporate Services. The need for this new role is examined further in [Section 14: Fire Prevention](#).

The GVFD organizational chart recommended for implementation over the medium to long terms is set out below in Figure 9.



Figure 9: Proposed GVFD Organizational Chart – Medium-Long Terms

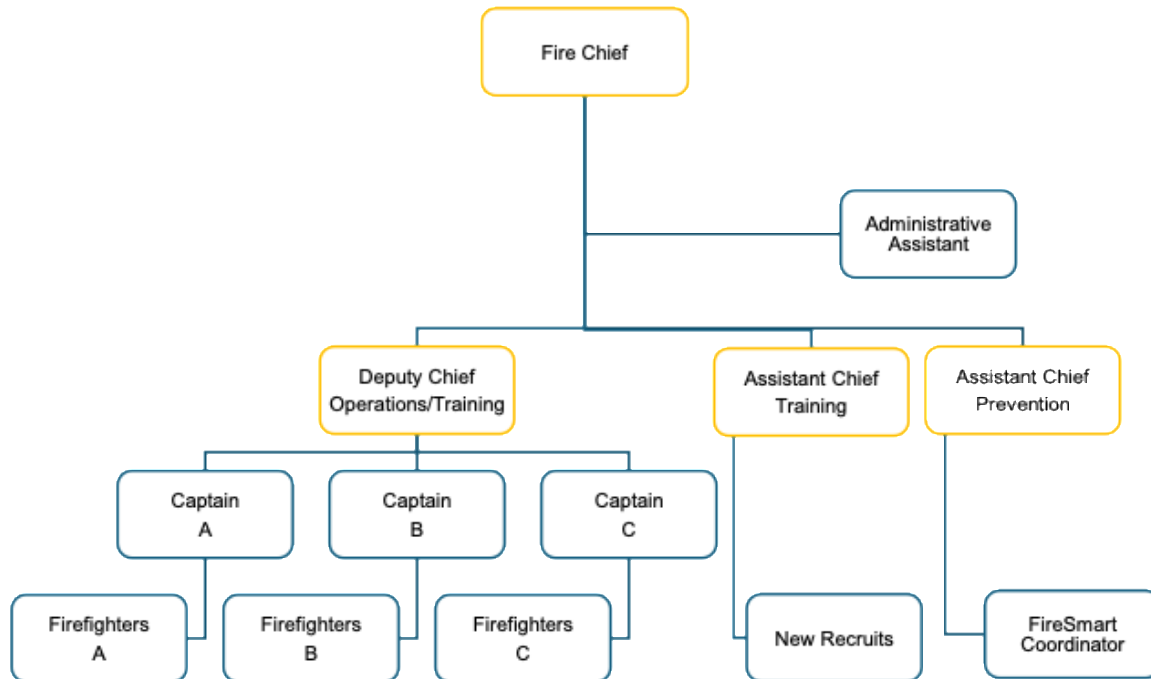


Figure 9 shows an organizational chart designed for sustainability, once internal capacity has been developed.

In the medium-long terms Organizational Chart:

- Addition of an Administrative Assistant function. The City already provides administrative support for the Department. As the Department develops into a more administratively independent entity, there will come a time when it is appropriate for an administrative function, be that a volunteer, part-time, shared or contracted resource, to report directly to the fire chief.
- The Training Administrator role is recommended to change to an Assistant Chief – Training position. This new position would be responsible for new recruits, as well as training for all Department members, and would act as a member of the Department’s Chief Officer Working Group.
- The FireSmart Coordinator/Fire Inspector role is recommended to be split between an Assistant Chief – Prevention position and FireSmart Coordinator position. The Prevention/FireSmart functions are shown in the medium-long term as being internal to the fire department, reporting through the Fire Chief.
- A third Captain position is recommended to support supervision of an increased number of firefighters.



8.2 USE OF FIREFIGHTERS FOR NON-RESPONSE WORK

Fire department operations involve a considerable amount of routine maintenance to ensure operational readiness. Within the Department, a lot of that work is currently performed by the Fire Chief or Deputy Chief, or the work is not undertaken. The Department must develop effective delegation techniques, and implement those.

One way to structure delegated work is to schedule firefighters to undertake work, and at the same time, delegate the authority needed to complete that work. A decentralization of authority and responsibility through delegation is recommended. New Captain positions can help facilitate this.

8.3 COMMITTEES

Effective internal communication is becoming increasingly important to the success of organizations. The strategic use of structured committees as communication conduits can produce considerable results, especially in a volunteer workplace where workers (firefighters) are in the workplace (fire halls) at times different than other City employees and managers.

8.3.1 OH&S Joint Committee

The City has an obligation to maintain and regularly utilize a fire department Joint Occupational Health and Safety Committee. The City should ensure that it maintains compliance with that obligation. The City's human resources should be a member of the fire department joint committee.

Information regarding the Department's Occupational Health and Safety program was not available for review. The City should ensure that it is compliant with requirements set out in the WorkSafeBC Act and Regulations.

8.3.2 Fire Department Officer Working Group

On a regularly scheduled basis, the Department's chief officers and Captains should meet to discuss and plan operational matters and to advise the Fire Chief. Informed, engaged, and empowered line officers (Captains) represent a considerable value to the City and the Department.

8.3.3 Firefighter Liaison Committee

Among the various other changes affecting fire departments utilizing Volunteer and POC firefighters is the emerging importance that firefighters have a voice and a process through which that voice can be heard. The Department should utilize a committee structure where representatives of the Volunteers, chosen by volunteer members, interact with chief officers and the City's CAO on non-operational matters. Operational matters should not be discussed at this level as they belong at the Officer Working Group table.



8.4 COMMUNICATIONS

8.4.1 Internal Communications

The Department was generally observed to have an absence of formal communication pathways. Chief officers are the knowledge holders. While chief officers and members are well-intentioned in terms of sharing information, the absence of a structured approach appears to be resulting in some information not reaching all members, and some members feeling that some information is not being shared.

Structures for various committees were outlined above. In particular, regular meetings of a Joint Occupational Health and Safety Committee and a Firefighter Liaison Committee, with shared, written meeting minutes (OH&S) and summaries (Firefighter Liaison Committee) would go a long way to helping all members to be better informed. Also, the creation of Captain positions, with platooning of the firefighters into crews, will help two-way communication, with Captains forming a communication bridge between chief officers and firefighters on operational matters.

8.4.2 External Communications

The City of Greenwood prides itself on its open communication and community engagement practices. In 2025 the City was the recipient of UBCM's Community Excellence Award for Excellence in Asset Management, largely based on the City's community engagement and communications practices.

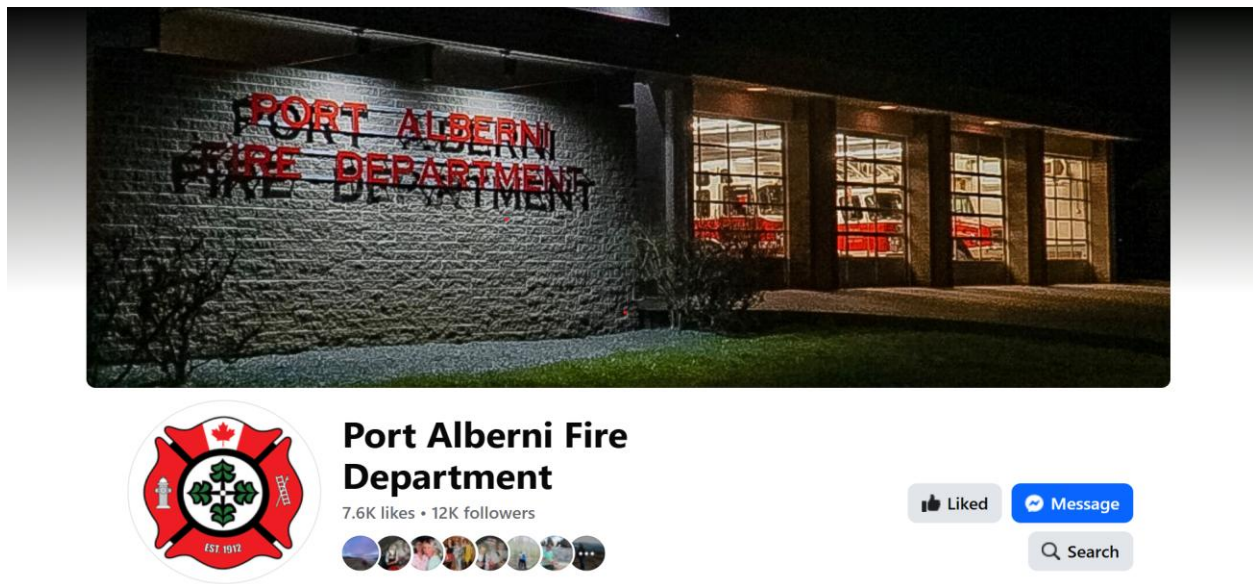
The City recently assigned responsibility for communications to one of its staff members.

Fire departments can realize several benefits from actively maintaining Facebook pages, developing followership through timely and professional posts. While GVFD does maintain a stand-alone Facebook page, like many fire departments, it has not yet strategically leveraged that opportunity as a tool for fire prevention, emergency communications or recruitment and retention of members.

Figures 10 and 11 below highlight success that one BC fire department has had in leveraging social media to meet its needs and the needs of its AHJ.



Figure 10: Port Alberni Fire Department Facebook Page



The City of Port Alberni and Port Alberni Fire Department (“PAFD”) have demonstrated a model use of social media. PAFD has invested in consistent and timely posting on Facebook and Instagram, resulting in a considerable following of those pages. PAFD’s Facebook page has developed a following of 12,000 people, and has received 7,600 Likes. PAFD’s use of social media in recent years has been professional and informative, and has not been used contrary to any City interests. Since development of this social media presence, the community is considerably better informed, and the fire department is well-supported, and rarely subject to negative online comments. During times of emergency in the Port Alberni community, residents and media outlets turn to this trusted source for timely and accurate information, making it a considerable resource.

Figure 11 below is a sample of a simple, accurate, and timely post that is focussed on public interest. Posts like these develop followership. Once a following has been established, social media platforms such as Facebook enable an organization to have extensive reach, educate the public about fire protection, provide information during times of emergency, and help to recruit new members and even retain existing members through positive community support.



Figure 11: Sample Fire Department Social Media Post



The power of these communication tools should be understood, as well as the potential consequences resulting from error or misuse. The Department should maintain an operational guideline (“OG”) regarding the use of Department communication tools and platforms. That OG should be consistent with any City policy or practices, and should remain current in what is a dynamic field. The City staff member responsible for communications should be provided access to the Department's Facebook page, and should directly manage that account along with the Fire Chief or designate.

The Department should consider the use of Instagram in order to reach a broader audience.

8.5 RECOMMENDATIONS – ORGANIZATIONAL STRUCTURE AND LEADERSHIP

	Recommendation	Timeline
9.	The City of Greenwood and Greenwood Volunteer Fire Department should implement organizational and committee structures outlined in the 2026 <i>Greenwood Fire Service Review and Fire Department Master Plan</i> report.	Short term
10.	The City of Greenwood and Greenwood Volunteer Fire Department should ensure compliance with obligations set out in WorkSafeBC Act and Regulations, with regard to operating a fire department, and utilization of a Joint Occupational Health and Safety Committee.	Short term
11.	The City of Greenwood and Greenwood Volunteer Fire Department should refresh the Fire Master Plan in year 2030 or sooner.	Long term
12.	Greenwood Volunteer Fire Department should utilize social media accounts as recommended in the 2026 <i>Greenwood Fire Service Review and Fire Department Master Plan</i> report.	Short term



9. FIRE SUPPRESSION STAFFING

GVFD is, and likely will continue to be, a volunteer-based organization.

9.1 RECOMMENDED NUMBER OF POC FIREFIGHTERS

Industry standards indicate that a fire department protecting a community that includes the level of complexity presented in Greenwood should be positioned to mobilize 15 trained and equipped firefighters, 90% of the time.¹⁶ Industry practices indicate that fire departments that utilize volunteer/POC firefighters can expect that 1/3 of all members will respond to page outs. Using that 3:1 ratio, GVFD would need to maintain a roster of 45 firefighters to reliably expect 15 to respond when needed. With a current total membership of 17, GVFD is clearly under-staffed.

The actual number of members the Department should maintain can be reduced, if:

1. The Department can demonstrate a response ratio better than 3:1. For example, a proven 2:1 response ratio could reduce the roster target to 30 members.
2. The Department develops reliable response support (automatic aid) with one or two neighbouring fire departments.

9.2 RECRUITMENT AND RETENTION

Changing times and challenges require changed approaches and solutions.

Recruitment, retention, and personnel development represent one side of a scale, offsetting attrition on the other side – a fine balancing act. Ideally, a fire department would be recruiting and developing new firefighters in advance of vacancies that arise due to retirements. GVFD is currently in a deficit staffing situation given that the active roster is below the Department's target level and this report's recommended level.

Notwithstanding the challenge of fire hall capacity to support more firefighters, the Department should renew its firefighter recruitment and recruit training programs, recruiting once or twice each year. City administration and communications staff should be involved in firefighter recruitment, providing professional support and guidance.

For any fire department utilizing volunteer/POC firefighters to improve outcomes from its recruitment and engagement processes, and engage candidates likely to meet response expectations, additional to other recommended actions in this report, some of the following actions should be implemented:

- Utilize the City's professional staff in recruiting firefighters;

¹⁶ NFPA 1720 is the Standard for the Organization and Deployment of Fire Suppression, Emergency Medical Operations, and Special Operations to the Public by Volunteer Departments, staffing recommendation for an urban setting.



- Create functional work teams by organizing firefighters into two or more crews (platoons), each under the supervision of a Captain;
- When the roster is sufficient, create a duty crew system with on-call/not-on-call scheduling for firefighters;
- Ensure that hourly rates of pay for POC firefighters are competitive, recognizing the current dynamic nature of this issue;
- Reduce the time commitment volunteer/POC members are expected to remain on-scene at incidents;
- Recruit volunteer/POC firefighters from among municipal employees, incentivize their involvement, and adopt a policy that permits them to leave job sites to respond to some emergency call out types;
- Review services, service levels, and page out protocols for opportunities to minimize volunteer/POC firefighter response obligations, especially for First Medical Responder and false alarms;
- Provide excellent leadership;
- Provide professional development opportunities;
- Regularly survey volunteer/POC staff to determine their needs and concerns;
- Engage with volunteer/POC firefighter representatives in a structured setting to facilitate two-way dialogue;
- Implement an exit interview program to be led by a City manager; and
- Strategically schedule one or two volunteer/POC firefighters to staff the fire hall at some times, completing routine work and responding to emergency calls.

The City and the Department should plan to conduct a recruitment drive in Q2 or Q3 of 2026, after first establishing a recruit engagement and training program and other necessary structures to both attract new recruits and keep them engaged.

9.3 RECOMMENDATIONS – FIRE SUPPRESSION STAFFING

Recommendation		Timeline
13.	The City of Greenwood and Greenwood Volunteer Fire Department should consider implementation of recruitment and retention measures outlined in the <i>2026 Greenwood Fire Service Review and Fire Department Master Plan</i> report.	Short term
14.	The City of Greenwood and Greenwood Volunteer Fire Department should monitor turnout for fire and alarms calls, calculate the 90% response ratio, and set Department roster targets accordingly to meet the NFPA 1720 standard of 15 firefighters 90% of the time.	Short term



10. EXTERNAL SUPPORT

There is considerable work to be done to elevate the Department's operations to come into compliance with minimum training standards, to develop and implement operational guidelines and other needed documents and procedures, and to develop internal capacities in terms of command and control, as well as firefighting strategies and tactics. The City and GVFD will require external expertise to guide this work, at least through the short term. It will likely require sustained efforts over several years to develop the internal capacities necessary for the Department to operate sustainably on its own.

To facilitate development of internal capacity in the Department and actioning of recommendations in the 2026 Fire Strategic Plan, a Fire Department Guidance Working Group ("GWG") should be established. The GWG should include senior City staff, Department chief officers, and external subject matter experts. Table 7 below outlines potential GWG participants.

Table 7: Potential Guidance Working Group Participants

Participant	Organization
Chief Administrative Officer	Greenwood
Chief Financial Officer	Greenwood
Corporate Officer	Greenwood
Fire Chief	Greenwood
Deputy Fire Chief	Greenwood
Training Administrator	Greenwood
GWG Coordinator	External
Fire Training/Evaluation Provider	External

Other Greenwood employees or external resources could attend GWG meetings as guests, as needed.

GWG meetings should be regularly scheduled.

Table 7 above indicates the involvement of two external participants. The GWG Coordinator could be a contracted position, essentially a project manager that facilitates the GWG process and supports forward advancement on various matters. The Fire Training/Evaluation Provider could also be an external contracted position, and potentially a chief officer from Grand Forks or Midway fire departments (see [Section 13: Training](#))



10.1 RECOMMENDATIONS – EXTERNAL SUPPORT

Recommendation		Timeline
15.	The City of Greenwood should establish a Fire Department Guidance Working Group to support development of Greenwood Volunteer Fire Department, as outlined in the 2026 <i>Greenwood Fire Service Review and Fire Department Master Plan report</i> .	Short term



11. FIRE HALL FACILITIES

GVFD operates out of an historic fire hall and a storage garage across the street from the fire hall. While the facilities are well-located, the fire hall clearly is not structurally or operationally suited to be used as an emergency response facility. The current *BC Building Code* requires that fire halls meet post-disaster structural standards. WorkSafeBC regulations require that fire hall facilities provide adequate separation between areas where products of combustion contamination (truck bays and turn out gear rooms) are separated from non-contaminated areas used for office space, training and other non-response activities. Adequate washroom and shower facilities should be provided, in order to support use by all genders.

The City should begin planning immediately for construction of a new fire hall.

The City has identified a 2-acre parcel of City-owned land for construction of a new fire hall. That site, located approximately 300 meters from the current fire hall, is well-located in terms of:

- Access to main travel corridors (located on Highway 3);
- Locations of calls for service;
- Locations of firefighters' residences (response times in fire departments utilizing volunteer/POC firefighters are affected by travel time between the fire hall and incident locations *as well as* travel distance between the fire hall and residences of firefighters); and
- Providing for 8-kilometer or less travel distance to a majority of structures in the service area, and 5-kilometer or less travel distance to commercial properties.

Maps below demonstrate the above metrics.

The selected construction site for a new fire hall should be evaluated for:

- Geotechnical suitability;
- Environmental Site Assessment (Stage 1 Preliminary Site Investigation);
- Potential for flooding (final grade of the site may need to be raised); and
- Consent of Ministry of Transportation and Transit for direct access onto Highway 3.



Figure 12: Locations of GVFD Call for Service, 2019-2024

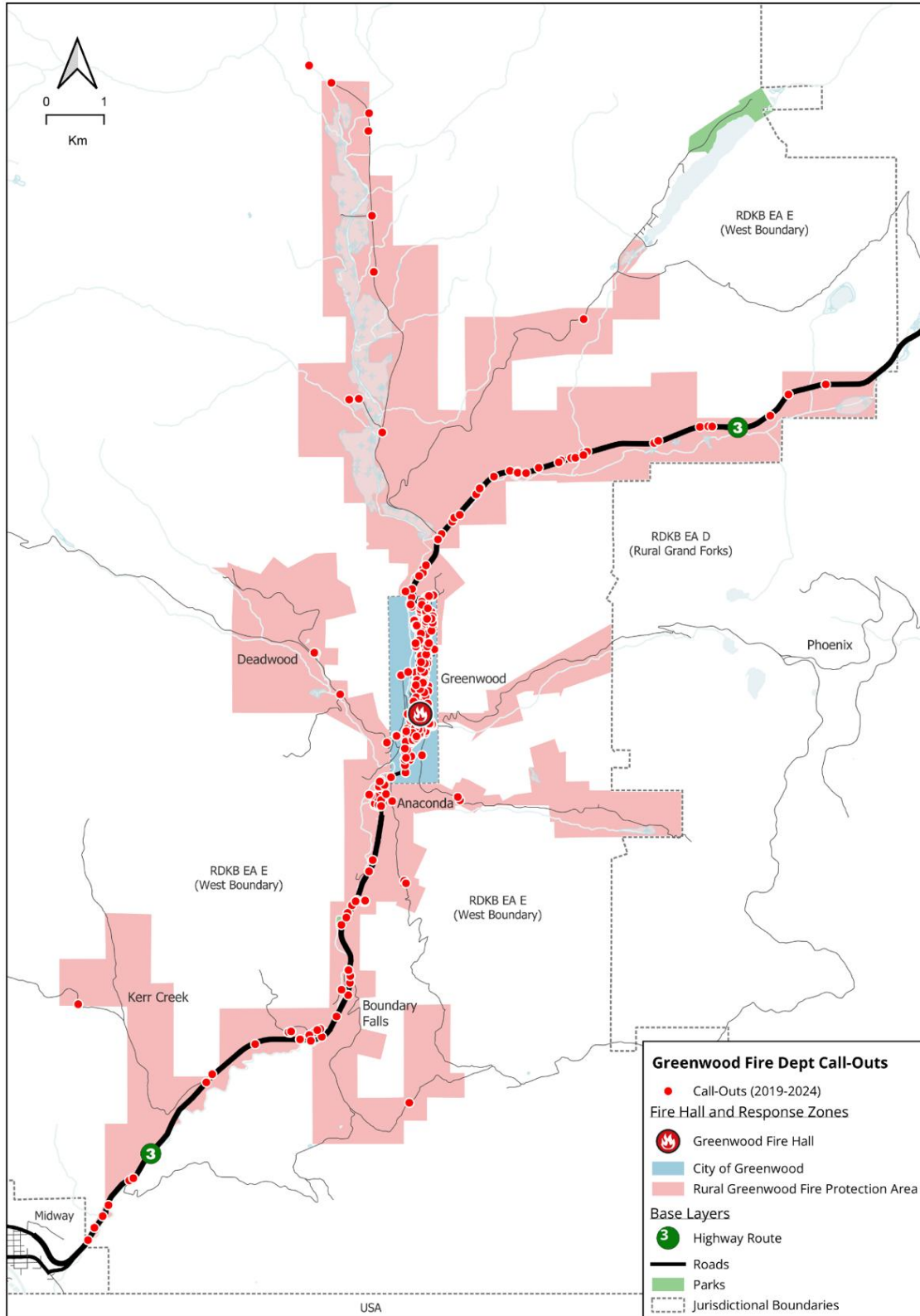


Figure 13: Locations of GVFD Calls for Service – Heat Map 2019-2024

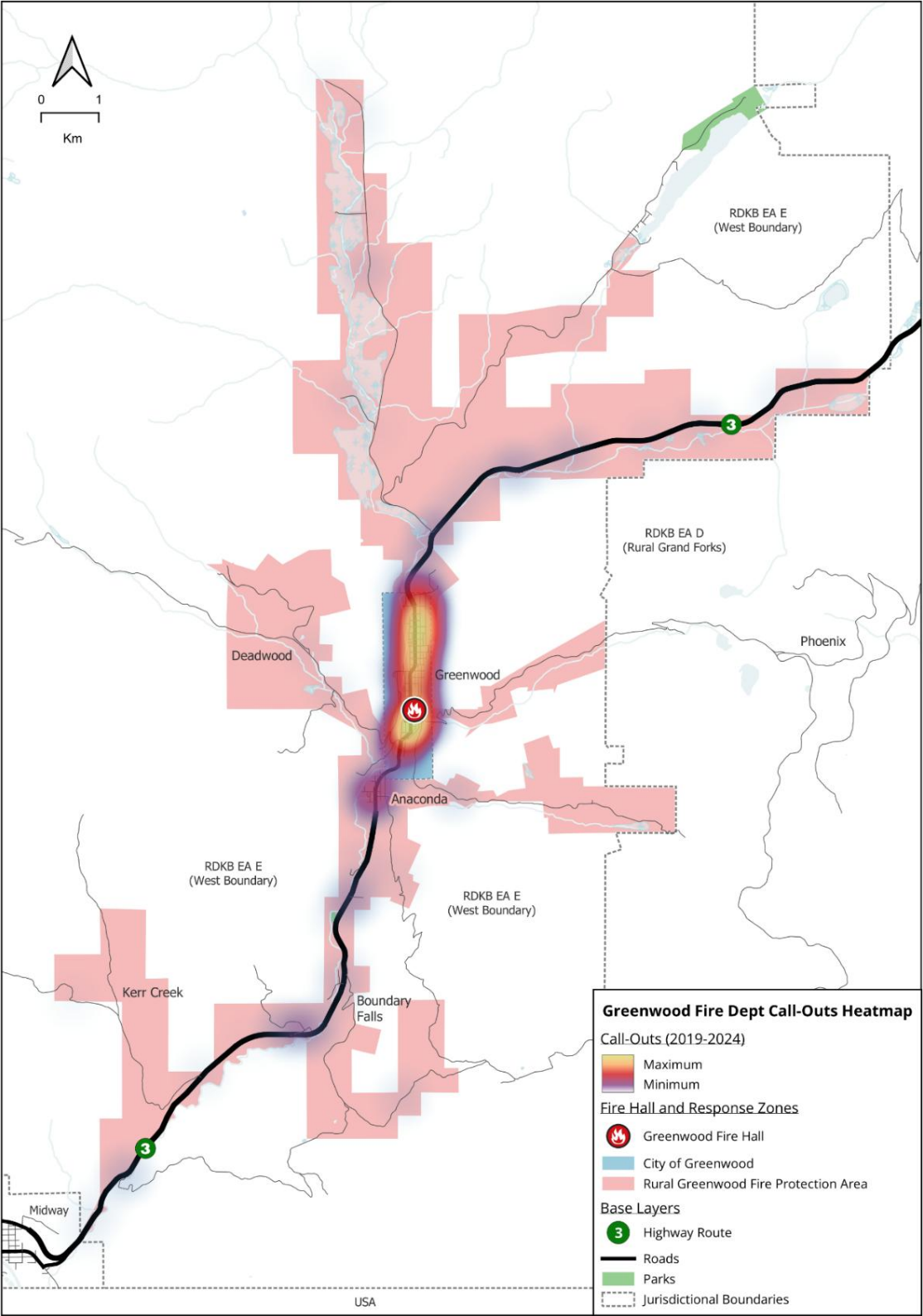


Figure 14: Locations of GVFD Firefighters' Residences (also showing site identified as potential location for a new fire hall)

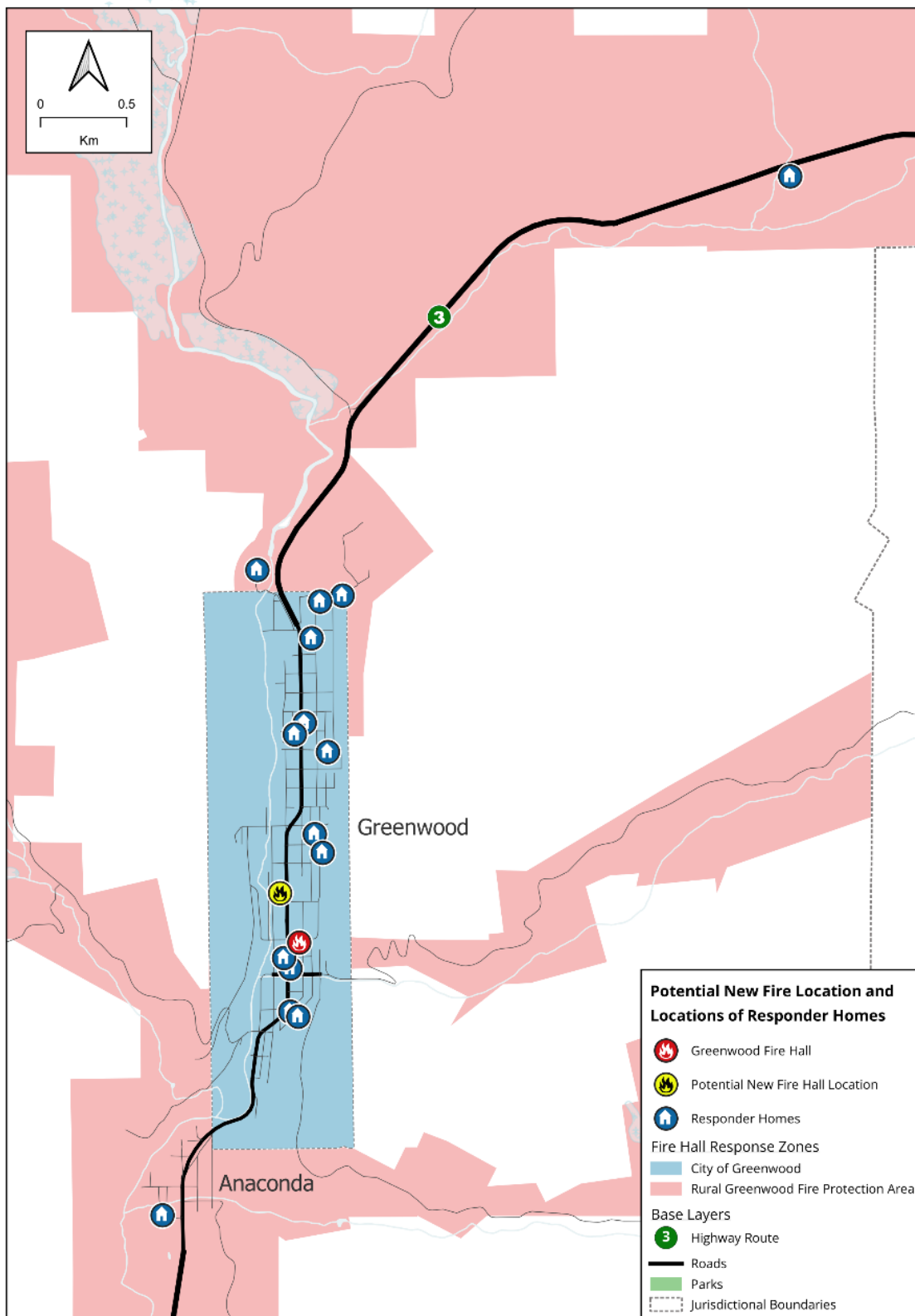
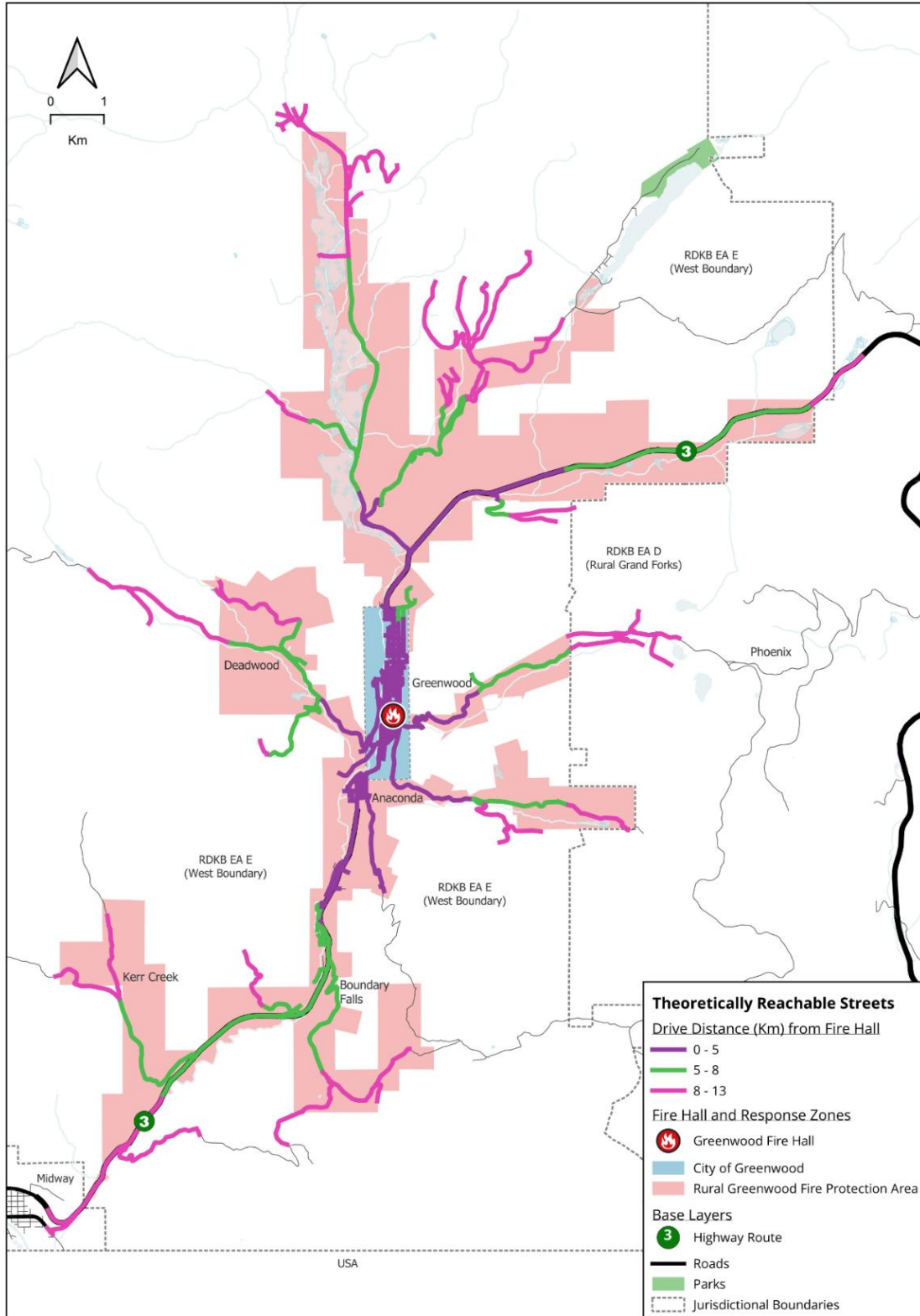


Figure 15: 5 and 8-Kilometer Travel Distances from GVFD Fire Hall



Figures 16 and 17 below provide sketches of potential layout and design of a new fire hall on the City-owned site identified for that purpose. These sketches are conceptual. Actual design would be based on a range of factors, including engagement with potential partner organizations that might desire to collocate their operations on the same site or in the same facility.

Figure 16: Sketch of Potential New Greenwood Fire Hall with Three Drive Through Bays¹⁷

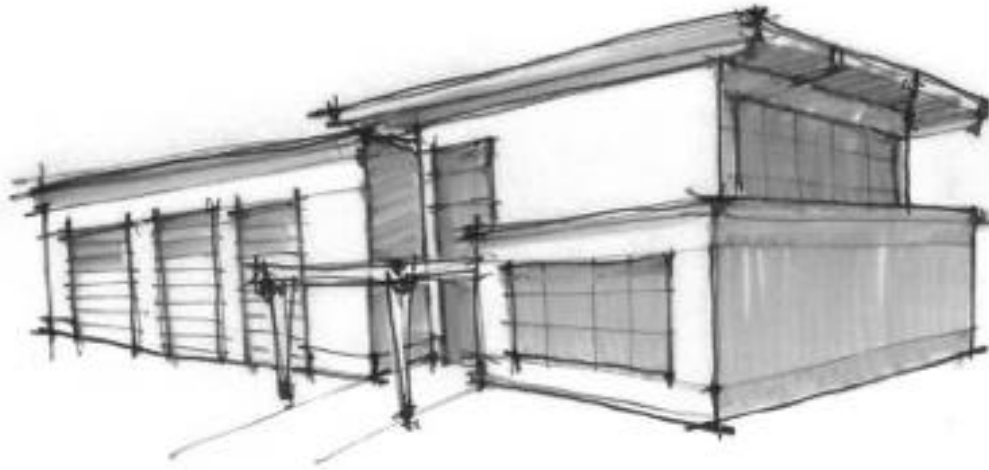


Figure 17: Site Plan Sketch of Potential New Greenwood Fire Hall on City-owned Site¹⁸

¹⁷ Provided by Waymark Architecture <https://waymarkarchitecture.com/>

¹⁸ Provided by Waymark Architecture <https://waymarkarchitecture.com/>



11.1 RECOMMENDATIONS – FIRE HALL FACILITIES

Recommendation		Timeline
16.	The City of Greenwood and Greenwood Volunteer Fire Department should begin planning for replacement of the fire hall.	Short term
17.	In the event that the City of Greenwood opts to replace its fire hall, the City should also undertake some renovations of the current fire hall in order to address immediate needs during the fire hall planning and construction phases, which could involve several years.	Short term



12. OPERATIONAL GUIDELINES

Fire departments commonly utilize operational guidelines (“OGs”) to essentially set the boundaries within which Department members function, sometimes during emergency situations where there is not time to seek direction from senior officers. An absence of clear and complete OGs, or lack of awareness of those documents, can contribute to freelancing (members making judgement decisions in real time without guidance), an increase in disciplinary actions, internal strife, and an increase in risk related to liabilities.

OGs in fire departments are essential for ensuring safety, efficiency, and effectiveness during firefighting operations. These guidelines cover various aspects of fire service operations, from responding to emergencies to maintaining equipment and training personnel. As a guiding principle, emergency responders should never be required to seek in-the-moment direction from a supervisor not physically present. Rather, OGs should provide the guidance necessary for the officer in charge to make an informed decision within parameters set out in OGs.

It is common for fire department OGs to be at least somewhat out of date and in need of revisions. Implementation of any recommendations set out in this report will also lead to the need to revise OGs and possibly create some new ones.

Where possible, OGs should be reviewed in draft form by the Fire Department Officer Working Group identified earlier in this report, prior to being signed by the Fire Chief and implemented. A procedure for reviewing and signing-off all new Department OGs and updating those OGs on a regular basis – e.g., a set portion of them annually, with other updates as required to meet any changes required to address operational, regulatory or administrative issues – should be formalized and implemented. The goal should be to ensure that each OG is reviewed at least once every three years.

In 2023 the Fire Chiefs’ Association of BC (“FCABC”) developed a template set of fire department OGs. These are available for FCABC members to use as the basis for a new set of OGs or to use as a guide when reviewing a fire department’s current OGs. Alternatively, the Department could use a well-developed set of local government OGs from another jurisdiction as a guide. The Columbia Shuswap Regional District’s fire department OGs are one example of a complete and reasonably up to date set.

Reviewing and updating of OGs represents considerable administrative work, which is partially why so many local government fire departments are out of compliance in this area. The City could retain a third party and/or create a project for in-house resources to update and rewrite a complete set of OGs, or the Department could develop a process to review and update OGs on a regular basis, modernizing GVFD OGs over time. Priority should be given to having the current fire chief sign off on all active OGs.

On review of the Greenwood Volunteer Fire Department OGs:

- The documents are dated March 1, 2016.
- The preamble indicates that each OG is intended to be reviewed three years after the effective date.



- Individual OGs are not dated and signed. Each should be individually dated and signed by the current fire chief.
- References within the OGs to RDKB procedures and documents indicate that these OGs might be RDKB OGs adopted without revision by Greenwood Volunteer Fire Department.

Given that GVFD works closely with Midway and Grand Forks fire departments, and this report recommends that those operational partnerships be deepened, GVFD should make efforts to align content of its OGs with content of OGs from Midway and Grand Forks.

OGs should be made available to all members, accessible online via various devices.

12.1 RECOMMENDATIONS – OPERATIONAL GUIDELINES

Recommendation		Timeline
18.	Greenwood Volunteer Fire Department should refresh Department Operational Guidelines, using third party guidance if needed, and establish a regular system of reviewing and renewing Operational Guidelines.	Short term
19.	Greenwood Volunteer Fire Department should adopt Department Operational Guidelines that meet the Department's needs and are operationally consistent with Midway and Grand Forks fire departments.	Short term



13. TRAINING

Training has emerged as one of the key change drivers in the fire service, contributing to the transition of the volunteer fire service to POC, and also causing AHJs to become more involved in overseeing fire departments for which they are responsible.

The *BC Minimum Structure Firefighter Training Standards* (formerly the “Training Playbook”) was last revised in 2022. With that revision, the ability of local governments to meet training verification requirements through in-house training programs became onerous to the point that only the largest of fire departments in BC now maintain stand-alone training programs. While many fire departments still conduct skills *maintenance* training by way of in-house programs, more and more fire departments are attaching their skills *development* training to third-party, accredited entities such as College of the Rockies (“CoR”) or Vancouver Island Emergency Response Academy (“VIERA”). This is commonly achieved by having internal trainers certified as an evaluator by one or more training agency, and conducting internal training and/or evaluation on behalf of the training agency, leading to third-party accreditation of internal training and evaluation.

Before internal fire department members can be accredited as trainers or evaluators, those individuals must first achieve accreditation for their own competencies. GVFD finds itself in the position of not having internal members who possess accredited competencies, and therefore cannot offer accreditation for any skills evaluations they undertake.

Operating a fire department absent of accredited training is no longer a palatable option for local governments. Conducting an internal training program that leads to accreditation without external involvement is also not an option available to Greenwood, leaving the only option being engagement of external resources until internal capacity has been developed. This can be expected to take two to three years.

During the Consultant’s engagements with chief officers from Midway and Grand Forks fire departments, both departments indicated a willingness to support GVFD, and in fact both departments have provided training support in the past.

The City should engage either Midway or Grand Forks fire department to provide external training and evaluation services within a structured and sustainable program. GVFD firefighters should all become certified, at a minimum, to the Exterior Operations level of firefighting. After that level has been achieved, firefighters should be enabled to continue firefighter training in order to achieve full NFPA 1001 certification.

New recruits should be entered immediately, in cohorts, into Exterior Operations level training.

While the Department does not currently have internal capacity to staff a Training Officer position, it does have capacity to develop and fill a Training Administrator position. This member would manage the administrative aspects of training, including scheduling, tracking, and procurement. In the medium to long term, this role should morph into an Assistant Chief – Training position.



13.1 RECOMMENDATIONS – TRAINING

Recommendation		Timeline
20.	Greenwood Volunteer Fire Department should partner with Midway or Grand Forks fire department for that department to provide firefighter training and evaluation services in a sustainable program.	Short term
20.	Greenwood Volunteer Fire Department should create and fill a Training Administrator position.	Short term
21.	Greenwood Volunteer Fire Department should create and fill an Assistant Chief – Training position.	Medium term



14. FIRE PREVENTION

While fire *suppression* is the highest visible activity that a fire department undertakes, and fire suppression readiness takes up most of the resources available to a fire department, a well-functioning local government fire protection regimen should include a robust fire prevention program. Fire prevention programs usually involve:

- regular fire inspections of public buildings;¹⁹
- supporting firefighters in developing pre-fire plans;
- review of plans for proposed new construction;
- interaction with municipal planners at the highest level to incorporate fire safety principles into community planning and design;
- fire cause and determination investigations;
- permitting for some fire-related matters such as fireworks or business licensing;
- FireSmart programming and planning; and
- fire safety education programs.

Currently, fire inspections are conducted by a third-party contractor, with support from the Fire Chief and Deputy Fire Chief. In at least one instance, the City has engaged with the Office of the Fire Commissioner, seeking support on an inspection and enforcement matter.

The City has identified 60 inspectable occupancies.

The recently adopted *Fire Safety Act* requires that municipal governments implement a risk-based compliance monitoring program, replacing the requirement for a program of regular fire inspections that was set out in the *Fire Services Act*. This different approach may provide opportunities for the Department to focus efforts on high-risk occupancies.

The *Fire Safety Act* requires that local governments delegate individuals or categories of individuals as fire inspectors²⁰ and fire investigators.²¹ The City has responded to this requirement by appointing the Fire Chief and Deputy Fire to these roles, reflecting the centralized organizational structure identified earlier in this report.

Fire inspections involve code-heavy, administrative work with a field-application aspect, quite similar to bylaw enforcement or building inspection. Fire inspectors need to be proficient at reading and interpreting codes and bylaws, applying provisions in those documents in the field, and accurately documenting inspections, orders, re-inspections, and enforcement measures.

¹⁹ The obligation to conduct regular fire inspections under the former *Fire Services Act* has been replaced by the obligation to monitor compliance under the new *Fire Safety Act*.

²⁰ Fire inspectors are individuals responsible for inspecting a structure or site for compliance with provisions in the BC Fire Code and local bylaws.

²¹ Fire investigators are individuals responsible for investigating the cause of fires.



This report includes a recommendation that, during the short term, the City appoint a Fire Inspector who reports directly to the Corporate Officer. This is intended to meet the City's needs in terms of developing and implementing a compliance monitoring program, and ensuring that the Fire Inspector receives the supervisory and administrative support needed to perform this work. The Fire Inspector would ideally be a member of the fire department, would possess the administrative skills necessary for the role, and could work out of an office in the fire hall. The Fire Inspector role could be volunteer, part-time, or be part of a full-time position with other municipal responsibilities (see FireSmart section below).

During the short term, the Fire Inspector should also serve as one of the City's designated fire investigators. Actual fire inspection could involve the Fire Inspector working side by side with one of the Department's chief officers, thus providing both the administrative skills needed, and the fire experience that is critical to fire investigation.

Over the medium to long term, when the Department has achieved operational and organizational levels identified in this report, the Fire Inspector role could be transitioned to an Assistant Chief – Prevention position, and the incumbent could then report directly to the Fire Chief.

14.1 PRE-FIRE PLANNING

Pre-fire planning is critical for fire departments in terms of operational effectiveness in complex buildings, and occupant and firefighter safety.

The provincial firefighter minimum training standards require fire departments that provide Interior Operations level service to have fire pre-plans for any premises that are more than a simple structure (simple structures include single family dwellings/duplexes). Fire departments are also required to use those pre-plans during training.

Aside from being a regulatory requirement, the importance of completing fire pre-plans lies in the following key areas:

- enhanced firefighter safety through pre-awareness of hazards;
- efficient and timely actions upon arrival on scene;
- improved resource deployment;
- effective Incident Command;
- streamlined "size up" and assessment of risks;
- improved life and property protection;
- collaboration with Stakeholders during the information gathering phase; and
- compliance with minimum training standards.

Dwight Eisenhower famously said that "*Plans* are worthless, but *Planning* is everything"²² meaning that no fixed plan aligns completely with a specific emergency. Applying that perspective to pre-fire planning,

²² 1957 November 15, New York Times, President Draws Planning Moral: Recalls Army Days to Show Value of Preparedness in Time of Crisis by William M. Blair, Quote Page 4, Column 3, New York. (ProQuest).



it is during the developing and updating of pre-fire plans that the value for firefighter safety and operational preparedness is derived. The actual plan documents are somewhat of a by-product of that valuable process.

Pre-fire planning work is similar to and inter-connected with fire inspection work. In order though for information gathered during pre-fire planning sessions to best used by responding firefighters, those firefighters should be involved in the preplanning process.

GVFD was not observed to have a documented pre-fire planning program that would meet the requirements of the minimum training standard or WorkSafeBC.

14.2 BUILDING PLAN CHECKING

The review of proposed construction and renovation plans is a critical step for fire departments in ensuring public safety and effective emergency response. It is also a vital component of a comprehensive fire prevention and safety strategy. Plan reviews ensure that newly constructed or renovated buildings are designed and constructed with fire safety in mind, ultimately reducing the risk of fires, minimizing their impact, and enhancing the overall safety in the community.

The importance of plan checking for fire departments can be highlighted in several key areas:

- BC Building Code and BC Fire Code compliance;
- Construction and demolition fire safety planning;
- Risk assessment;
- Support pre-fire planning;
- Enhancing community safety; and
- Education and outreach with construction and development professionals.

The Fire Inspector should lead for the Department in plan checking.

14.3 BUSINESS LICENSING & PERMITTING

Business licensing and permitting both present opportunities for a local government to identify and rectify safety concerns. In some cases, such as childcare licensing, provincial authorities require inspection by the local fire chief or their designate prior to the granting of a license. Likewise, the City could make fire inspection a condition of business licensing and some types of permitting. For example, a fire inspector could add safety value by reviewing applicant plans for permits involving fireworks, building, demolition, fire hydrant use, or filming.

14.4 FIRESMART

The City is currently a part of the RDKB FireSmart program.

Considerable funds are available through the Union of BC Municipalities (“UBCM”) for FireSmart programing, including to fund local government FireSmart Coordinator positions. The City should explore



the potential to access grant funding, and use that funding to create and fill a full-time FireSmart Coordinator position. The funding program managed by UBCM currently enables up to 20% of funded effort to be used for non-FireSmart activities. The City should explore the potential to access this funding, and create a fully-funded FireSmart Coordinator/Fire Inspector position, reporting to the Manager of Corporate Services.

Many local governments utilize FireSmart coordination as a critical central point around which communities coordinate planning and response to what has emerged as the primary risk to those communities. Wildfire represents one of the City's most significant risks. A FireSmart Coordinator/Fire Inspector could leverage the Greenwood community volunteer spirit, working closely with the City's new bylaw enforcement officer, and making Greenwood significantly more resilient to the risks of structure and wildfire.

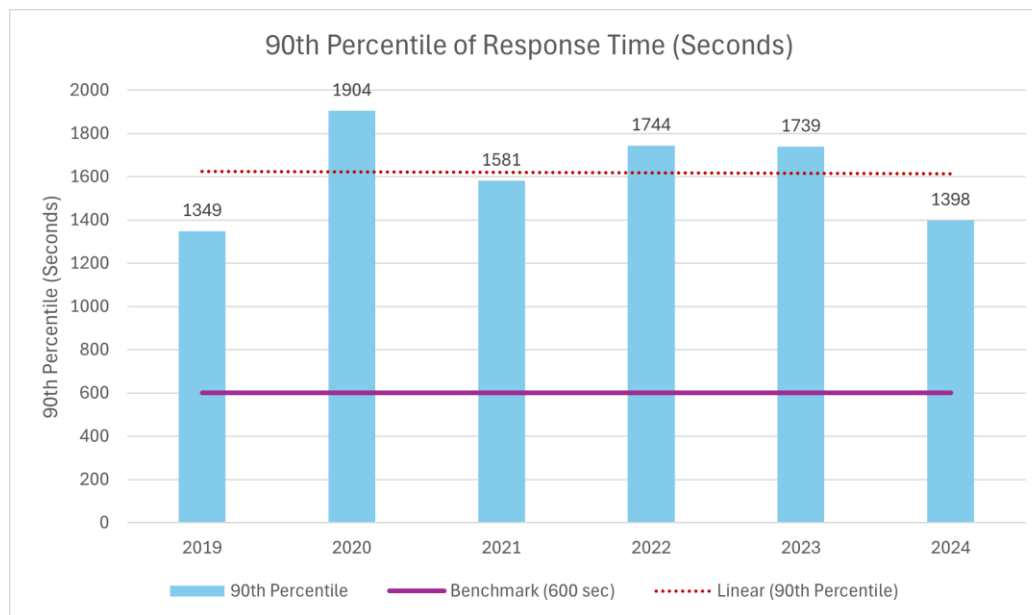
14.5 10 MINUTE RESPONSE AREA (BC BUILDING CODE REQUIREMENT)

The BC Building Code stipulates that where a fire department cannot provide a response in 10 minutes or less 90% of the time, certain fire safety provisions must be integrated into the siting, design and construction of buildings that are not already protected by fire sprinklers (see Appendix 4). Under its current operating model, like many POC departments, GVFD cannot provide a 10-minute response 90% of the time to any structures.

Figure 18 below shows GVFD's 90th percentile response times. Bearing in mind that measuring performance to the 90th percentile level sets a high bar, intentionally measuring the consistent performance of a fire department that can be relied upon with few exceptions. The benchmark (600 seconds, or 10 minutes) shown in Table 8 is drawn from NFPA 1710, a standard that applies to fire departments that utilize full-time, on duty staff, and is provided in Table 8 (Section 15) for context, and to help readers understand that GVFD will not likely be encountering room and contents fires, but rather fully-involved structure fires that are threatening neighbouring structures.



Figure 18: GVFD 90th Percentile Response Times – 2019 - 2024



14.6 RECOMMENDATIONS – FIRE PREVENTION

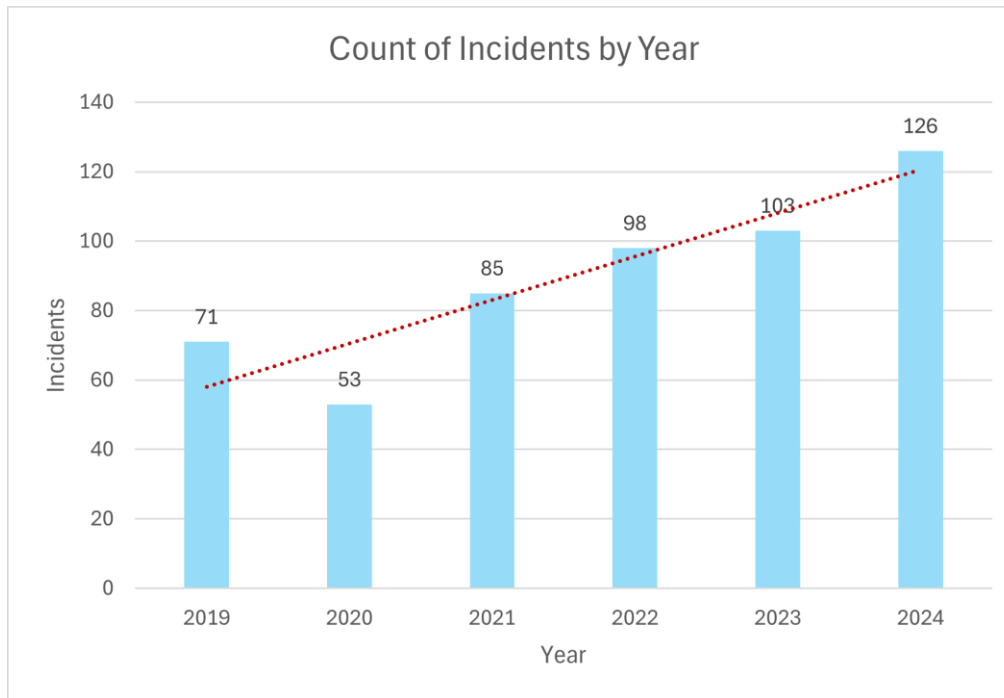
Recommendation		Timeline
22.	Greenwood Volunteer Fire Department should develop and implement a new risk-based compliance monitoring program, as required by the <i>Fire Safety Act</i> .	Short term
23.	The City of Greenwood should explore potential to access grant funding to enable the hiring of a FireSmart Coordinator	Short term
24.	Greenwood Volunteer Fire Department (Fire Chief) should report annually to City Council on progress in the fire prevention division, including the number of fire inspections conducted and pre-fire plans developed relative to targets.	Short term
25.	Greenwood Volunteer Fire Department should develop a pre-fire planning program, and engage firefighters to develop and update those plans under the supervision of a new Fire Inspector position.	Medium term
26.	The City of Greenwood should create and fill a FireSmart Coordinator/Fire Inspector position, reporting to the Corporate Officer.	Short term
27.	The City of Greenwood should create and fill an Assistant Chief – Prevention position, reporting to the Fire Chief.	Medium term



15. INCIDENT RESPONSE DATA

Like many fire departments in BC, GVFD has been experiencing an increase in calls for service. Between 2019 (the last pre-pandemic year) and 2024, calls for service increased by 78%, from 71 in 2019 to 126 in 2024.

Figure 19: GVFD Calls for Service 2019–2024



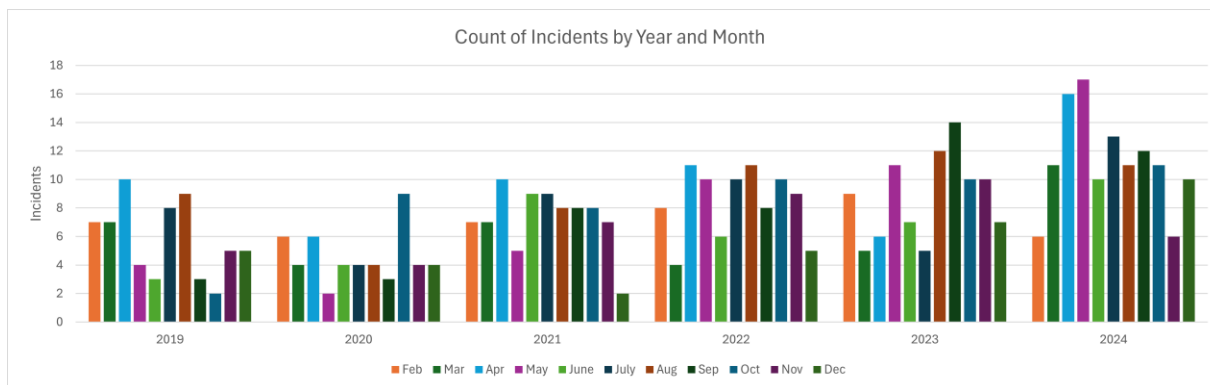
The trending increase in calls for service has been consistent, saving 2020 when changes made by BCEHS in dispatch protocols for First Medical Responder calls resulted in reductions in calls for service for many fire departments in BC. Fire departments in BC commonly saw reductions in other types of calls for service in 2020, likely resulting from changed behaviours related to COVID pandemic response efforts.

126 calls for service is not an onerous call volume. In fact, a volunteer-based fire department can experience too few calls to keep members engaged. Some fire departments utilizing volunteer/POC firefighters experience response fatigue around the 500 calls per year level, although a fire department's capacity for call volume appears to be unique to each department.

Some communities experience seasonal peaks and valleys in call volume. Figure 20 below shows that, while GVFD calls for service have increased over the previous six years, there is no discernable seasonal pattern.



Figure 20: Count of Incidents by Year and Month



A closer look at calls by month over the previous six years does show a tendency for volume of calls to taper off during winter months, but not to the extent that fire department operations could or should be altered with that knowledge.

Figure 21: Count of Incidents by Month 2019-2024

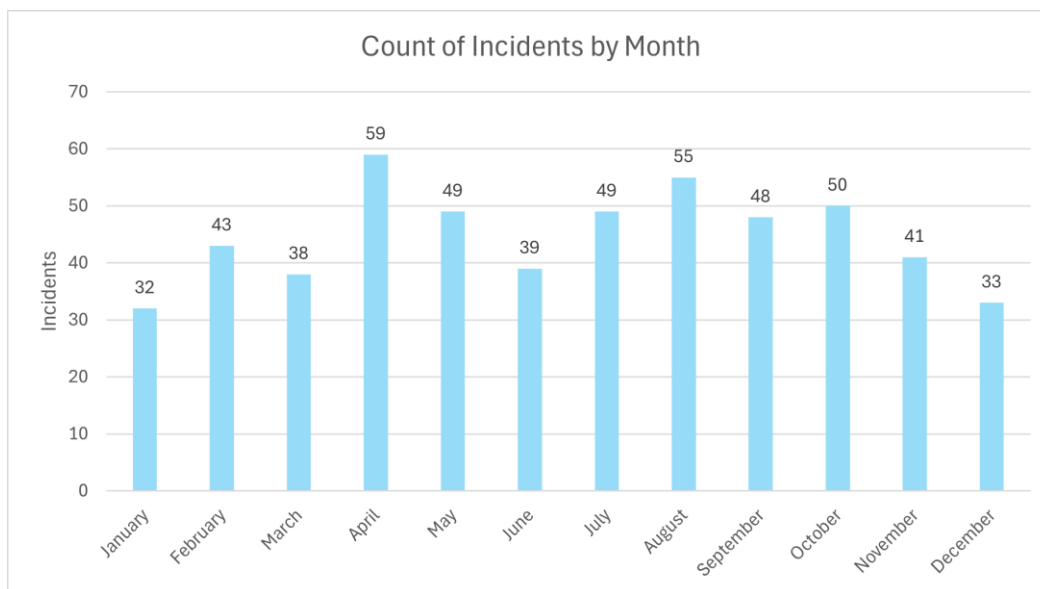
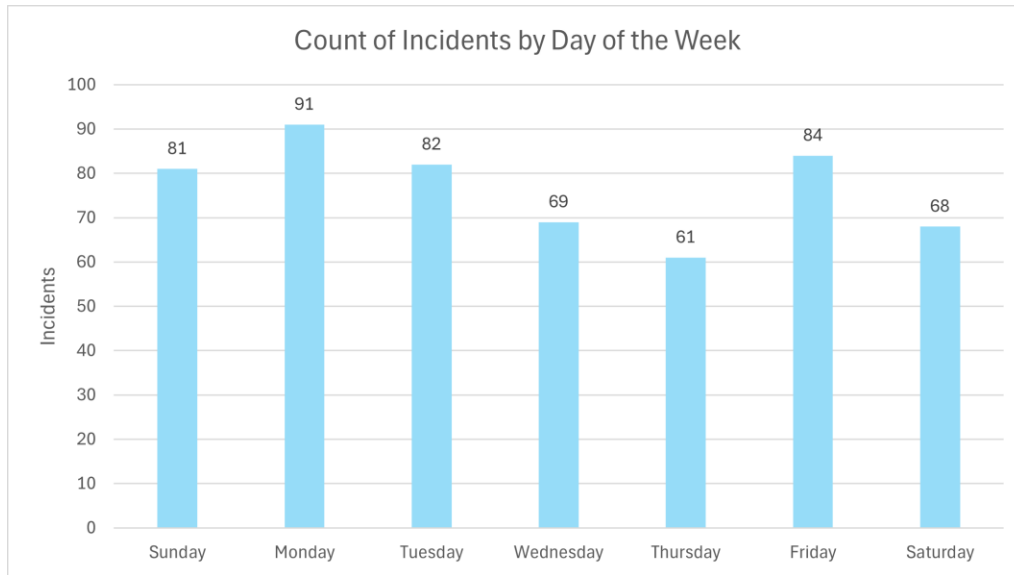


Figure 22 below indicates a slight reduction in calls during mid-week days, but again, not to a significant level.

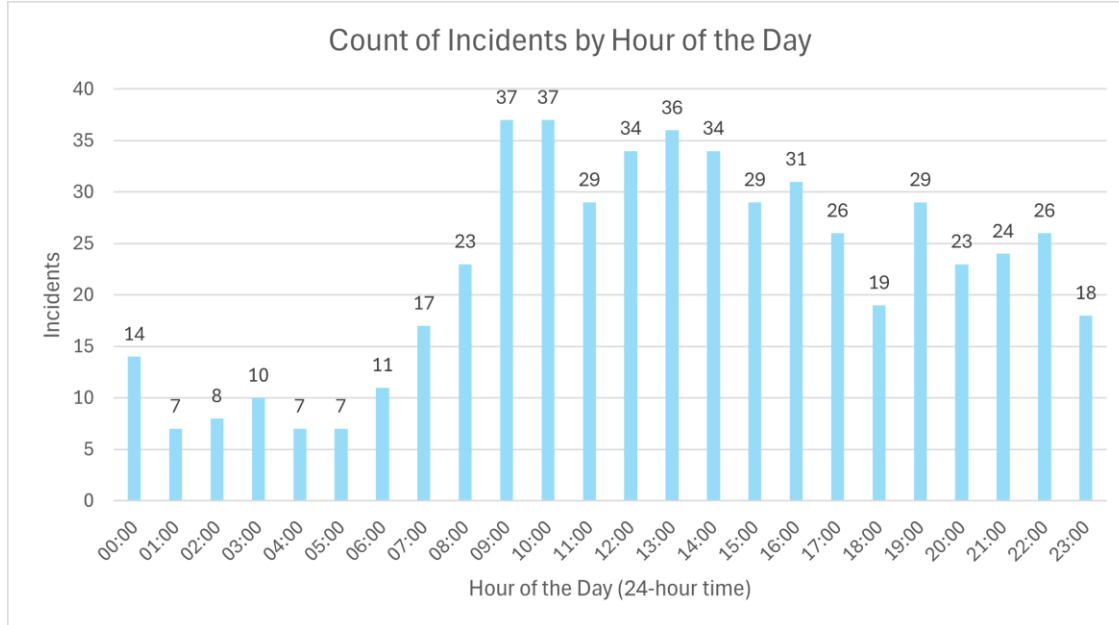


Figure 22: Count of Incidents by Bay of the Week 2019-2024



Where volumes of calls for service noticeably vary is by hours of the day. Figure 23 below shows that calls for service are highest between 0800 and 1600 hours, and significantly lower between 2300 and 0700 hours.

Figure 23: Count of Incidents by Hour of the Day



The variation in volume of calls for service during daytime hours compared to nighttime hours is significant. Fire departments that rely on volunteer/POC firefighters commonly experience their lowest turn out numbers during daytime hours, when members are at work and/or out of the community. The



overlap of this low response capacity window of time and the time when demand for service is highest, often leads local governments to begin to hire daytime staff in their fire departments.

The City should consider taking steps to bolster the Department's capacity to respond to daytime calls for service, including encouraging its employees to serve in the fire department, and supporting those employees in doing so.

In terms of types of calls for service, Table 8 below indicates the number of calls for service by type in each of the previous six years. Notably, First Medical Responder calls for service represented 55% of all calls for service over the past six years, and 60% in 2024.

Table 8: Incidents by Type and Year, 2019–2024 (FMR calls represent 23 different FMR call classifications combined)

Incident Type	2019	2020	2021	2022	2023	2024	Total	%
ALARM			4	2	4	4	14	2.6%
ASSIST OTHER AGENCY	1	8	6	5	5	9	34	6.3%
BURNING COMPLAINT	3	2	5	3	8	6	27	5.0%
CAR FIRE	2	1				5	8	1.5%
CARBON MONOXIDE ALARM	2		1	2		1	6	1.1%
CHIMNEY FIRE			1			1	2	0.4%
FIRST MEDICAL RESPONDER	34	19	48	55	65	75	296	55.2%
GAS/OIL SMELL/SPILL		1				1	2	0.4%
MINOR FIRE	1	1	2	1		1	6	1.1%
MVA	6	5	2	4	1	2	20	3.7%
MVA/EXTRICATION	8	8	7	15	13	6	57	10.6%
NATURAL GAS LEAK			1	1			2	0.4%
POWER/TEL/CABLE LINE DOWN	1					1	2	0.4%
PROPANE LEAK / SMELL	1			1			2	0.4%
PUBLIC SERVICE	1		2		1	3	7	1.3%
RECHECK			1				1	0.2%
RESCUE - LOCK-IN					1		1	0.2%
SMOKE	3	3	2	2	4	5	19	3.5%
STRUCTURE FIRE	7	2	1	1	1	4	16	3.0%



Incident Type	2019	2020	2021	2022	2023	2024	Total	%
WILDFIRE/GRASS/BRUSH/OUT DOOR	1	3	2	6		2	14	2.6%
Total	71	53	85	98	103	126	536	100%

The City should monitor the volume of calls for service, the types of calls for service, and Department response metrics. The Fire Chief should report at least quarterly on these matters to Council for the City of Greenwood.

15.1 RECOMMENDATIONS – INCIDENT RESPONSE DATA

Recommendation		Timeline
28.	The Fire Chief should report regularly, at least quarterly, to Council for the City of Greenwood on the type and volume of calls for service, as well as Department response metrics. Council should continue to consider the services that Greenwood Volunteer Fire Department provides and the levels to which those services are provided.	Short term
29.	The City of Greenwood should consider taking steps to bolster Greenwood Volunteer Fire Department's capacity to respond to daytime calls for service, including encouraging its employees to serve in the fire department, and supporting those employees in doing so.	Short term



16. REGULATORY MATTERS

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

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

16.1 FIRE SERVICES BYLAW - BYLAW No. 486

The City’s Bylaw No. 486, *A Bylaw to Establish Regulations of the Greenwood Voluntary Fire Department*, dated 1983, requires considerable revision, including;

- Replace any references to the *Fire Services Act* with reference to the *Fire Safety Act*;
- Delete reference to the Department being “volunteer” or “voluntary”;
- Delete reference to Chief, Deputy Chief, and Firemen in Section 1, as well as the number of personnel in each position. Instead, delegate authority to the Fire Chief to create and fill officer and firefighter positions as deemed necessary for provision of services;
- Delegate to the Fire Chief, authorities set out in the *Community Charter* and *Fire Safety Act*;
- Remove any reference to a committee of officers (Section 2) or to election of officers (Section 7);
- Provide that Council for the City of Greenwood will determine by policy the services and service levels that will be provided by the Greenwood Fire Department, subject to change from time to time at the discretion of Council;
- Enable the City to enter into, and modify from time to time, service agreements, at the discretion of Council;
- Deleted any reference to Local Assistants to the Fire Commissioner (“LAFC”) or Fire Marshall (Section 11, 12, 14).



16.2 FIRE SAFETY ACT

The *Fire Safety Act* (the “FSA”), which received Royal Assent in 2016, was brought into force as of 1 August 2024, superseding and replacing the *Fire Services Act*. From the perspective of the City and the Department, the principal changes arising from the FSA that will need to be addressed in bylaw, policy, and operational guidelines updates, are set out below.

- Designate Fire Inspectors and Fire Investigators;²³ and
- Development of a risk-based compliance monitoring program.

A deeper summary of the FSA as it pertains to municipalities can be reviewed at [TPA - Fire Safety Act - Municipalities](#).

16.3 RECOMMENDATIONS – REGULATORY MATTERS

Recommendation		Timeline
30.	When Bylaw No. 486 is updated, the City of Greenwood should address issues outlined in the <i>2026 Greenwood Fire Service Review and Fire Department Master Plan</i> report.	Medium term

²³ The City has already addressed this obligation. This report includes recommendations for modification of the City’s policy regarding designation of fire inspectors and fire investigators.



17. FIRE UNDERWRITERS SURVEY

The primary purpose of Fire Underwriters Survey (“FUS”) is to establish the Dwelling Protection Grade (“DPG”) and Public Fire Protection Classification (“PFPC”) for each community in the country. The DPG rating generally applies to single family detached residences,²⁴ whereas the PFPC rating applies to multi-family residential, commercial, industrial and institutional buildings or districts, and generally is applied by the “commercial lines” arm of the insurance industry.²⁵

The PFPC rating scale runs from 1 (the best fire protection) to 10 (no fire protection). The DPG rating scale runs from 1 (the best fire protection) to 5 (no fire protection). The insurance industry generally regards 1 – 3A as being “fully protected”, 3B and sometimes 4 as being “semi-protected”, and sometimes 4 and always 5 as being “unprotected.”

Travel distances from a responding fire hall represent key gating factors for DPG (8 kms) and PFPC (5 kms). 5- and 8-kilometer travel distances from Greenwood’s fire hall were shown earlier in this report, in Figure 15, demonstrating very good coverage within the City and beyond into the contract service area.

Further information regarding FUS requirements and processes for assessing DPG and PFPC ratings can be found at <[TPA - Fire Underwriters Survey Summary](#)>.

Information regarding the City of Greenwood’s current DPG and PFPC classification, and any communication between the City and FUS, was not available for review. In general, a local government undertaking a fire master planning process should follow the steps outlined in the recommendations below.

17.1 RECOMMENDATIONS – FIRE UNDERWRITERS SURVEY

Recommendation		Timeline
31.	Greenwood Volunteer Fire Department should update the Department’s profile information via the Fire Underwriters Survey online portal.	Short term
32.	The City of Greenwood and Greenwood Volunteer Fire Department should continue to innovate in endeavouring to maximize the working lives of fire apparatus, and the accredited value applied to those apparatuses by the insurance industry.	Medium term

²⁴ Under the Fire Underwriters’ definitions, the DPG ratings generally apply to the following: “One- and Two-Family Detached Dwellings (buildings containing not more than two dwelling units) in which each dwelling unit is occupied by members of a single family with not more than three outsiders, if any, accommodated in rented rooms.” In addition, under this system a “typical” detached dwelling is a maximum of 3,600 square feet in size. See: <https://fireunderwriters.ca/grading/dwelling-protection-grade.html>, “Terms of Reference”.

²⁵ Fire Underwriters Survey website, “What is PFPC” at <https://fireunderwriters.ca/grading/public-fire-protection-classification.html>.



Recommendation		Timeline
33.	After substantial progress has been made on implementing recommendations from the 2026 <i>Greenwood Fire Service Review and Fire Department Master Plan</i> report, Greenwood Volunteer Fire Department should engage Fire Underwriters Survey to undertake a full review of Greenwood's fire protection services.	Long term



18. AID AGREEMENTS

Mutual aid agreements are essential tools that enable fire departments to provide aid to one another, when circumstances warrant. They permit fire departments to share resources and specialty services (e.g., specialty rescue or hazardous materials responses), and enable them to obtain critical support for major incidents or other situations where a fire department's resources are overwhelmed by events. Mutual aid agreements require a specific request for assistance from the requesting department, before another department responds to the incident. Operationally, it usually means that a fire department arrives on scene, determines it will need assistance, and then makes a request through its dispatch provider for a mutual aid turn out. This can result in a significant delay before assistance arrives.

Automatic aid agreements are a variant of mutual aid, under which the participating fire departments agree that they will be automatically dispatched to assist neighbouring fire departments. The principal benefit of automatic aid agreements is that they minimize the delay before additional resources begin responding from a responding fire department. Another benefit of automatic aid, is that insurance underwriters may assign "credit" to firefighting resources that can be relied upon under a properly constructed and duly executed automatic aid agreement.

The City of Greenwood is party to a mutual aid agreement with Midway and Grand Forks, but is not currently party to an automatic aid agreement.

One matter to be addressed when renewing the current mutual aid agreement and/or developing a new automatic aid agreement is, currently, both Midway and Grand Forks operate at a higher service level than Greenwood. It is current practice for firefighters from Midway and Grand Forks to conduct interior firefighting operations while attending fires in the GVFD fire protection service area, even though the level of service in that service area is Exterior Operations. The aid agreements checklist in Appendix 5 outlines how that matter can be addressed.

18.1 RECOMMENDATIONS – AID AGREEMENTS

	Recommendation	Timeline
34.	The City of Greenwood should continue to be party to a revised mutual aid agreement with Midway and Grand Forks.	Short term
35.	The City of Greenwood should enter into automatic aid agreements with Midway and Grand Forks.	Medium term



APPENDIX 1: INTEREST HOLDER ENGAGEMENTS

Service Area	Stakeholder Representative(s)	Consultants	Date	Location
Kick off meeting	Dean Trumbley, CAO Brooke McCourt, Corporate Officer Roy Terashita, Fire Chief Pat Sheppard, Deputy Chief	Tim Pley Ian MacDonald Christine McLenan	June 20, 2025	Teams
City of Greenwood	Dean Trumbley, CAO	Tim Pley	August 11, 2025	City Hall
Greenwood Volunteer Fire Department	Roy Terashita, Fire Chief	Tim Pley	August 11, 2025	City Hall
Greenwood Volunteer Fire Department	Pat Sheppard, Deputy Chief	Tim Pley	August 11, 2025	City Hall
City of Greenwood	Mayor & Council: Mayor John Bolt Councillor Huisman Councillor McLean Councillor Rhodes Councillor Shaw	Tim Pley	August 11, 2025	City Hall
Grand Forks & Midway Fire Departments	Rich Piche, Fire Chief, Grand Forks Mike Daloise, Deputy Fire Chief, Grand Forks Corey Kortmeyer, Fire Chief, Midway	Tim Pley	October 27, 2025	Grand Forks Fire Hall



Service Area	Stakeholder Representative(s)	Consultants	Date	Location
	Morgan Strohmman, Deputy Fire Chief, Midway			
RDKB	Dan Derby, Regional Fire Chief, Kootenay Boundary Regional Fire Rescue	Tim Pley	October 28, 2025	Trail, BC
Greenwood Volunteer Fire Department	GVFD Firefighters (13)	Tim Pley	October 28, 2025	Fire Hall
City of Greenwood	Dean Trumbley, CAO	Tim Pley	October 29, 2025	City Hall
City of Greenwood	James Sexton, CFO	Tim Pley	October 29, 2025	City Hall
City of Greenwood	Erich Schneider, Public Works Foreman	Tim Pley	October 29, 2025	Public Works
Greenwood Community	Community Members, Firefighters, City Council & Staff	Tim Pley	October 29, 2025	McArthur Centre Community Hall



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Figure 19: GVFD Calls for Service 2019-2024

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Figure 23: Count of Incidents by Hour of the Day



APPENDIX 4: 10 MINUTE RESPONSE AREA (BC BUILDING CODE REQUIREMENT)



Office of Housing and
Construction Standards

Information Bulletin
Building and Safety Standards Branch
PO Box 9844 Stn Prov Govt
Victoria BC V8W 9T2
Email: building.safety@gov.bc.ca
Website: www.housing.gov.bc.ca/building

No. B13 - 04
July 8, 2013

Fire Department Response Time

Background

The BC Building Code uses different criteria to establish spatial separation requirements for unsprinklered buildings, depending on the response time of a fire department. Where the response time, measured according to the parameters in this bulletin and 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.

How do I determine fire department response time?

For the purpose of the application of Clauses 3.2.3.1.(8)(a), 9.10.14.3.(1)(a) and 9.10.15.3.(1)(a) of the BC Building Code, fire department response time shall be considered to be the time from the receipt of notification of a fire by the fire department, to the arrival, at the building or building site, of the first firefighting vehicle that is staffed and equipped to fight a fire for the purpose of limiting the exposure to adjacent buildings.

This bulletin is only intended to address the measurement of fire department response time for application of Clauses 3.2.3.1.(8)(a), 9.10.14.3.(1)(a) and 9.10.15.3.(1)(a) of the BC Building Code.

When do I start measuring and when do I stop?

Measurement of fire department response time starts when the fire department receives notification, and does not include the time it takes for 911 or other dispatch services to relay the call to the fire department. Response time ends when the first firefighting vehicle arrives at the building or building site, and does not include additional set-up time for the vehicle or crew.

The estimated response time should be determined for the specific building site and not an average for the general community. The response time should be determined using present, factual information and circumstances. Fire department response time does not need to account for potential future impacts such as increased traffic congestion or road closures.

1

The contents of this Bulletin are not intended to be provided as legal advice and should not be relied upon as legal advice. For further information contact the Building & Safety Standards Branch.





What is a 'firefighting vehicle'?

A firefighting vehicle is one that has integral firefighting equipment and does not include support vehicles, such as pickup trucks or other passenger vehicles.

Do I need to be familiar with NFPA 1710?

The reference to NFPA 1710 in Appendix note A-3.2.3.1.(8) is intended to provide commentary on the measurement of response time based on 90% of actual response times. NFPA 1710 is not a referenced standard in the BC Building Code and there is no expectation that performance requirements in NFPA 1710 be met.

Code references:

3.2.1.3.(8)(a) the time from receipt of notification of a fire by the fire department until the arrival of the first fire department vehicle at the building exceeds 10 min in 10% or more of all fire department calls to the building, and

9.10.14.3.(1)(a) the time from receipt of notification of a fire by the fire department until the first fire department vehicle arrives at the building exceeds 10 min in 10% or more of all calls to the building, and

9.10.15.3.(1)(a) the time from receipt of notification of a fire by the fire department until the first fire department vehicle arrives at the building exceeds 10 min in 10% or more of all calls to the building, and



APPENDIX 5: AID AGREEMENTS CHECKLIST

The following is a summary of the principal issues that should be addressed in aid agreements (an “Aid Agreement”). This list should not be treated as comprehensive. Parties wishing to develop an Aid Agreement should obtain assistance from legal counsel.

In this checklist, a “requesting fire department” is the fire department that has asked for or is receiving aid under an Aid Agreement. A “responding fire department” is the fire department providing the assistance in the requesting department’s jurisdiction.



Aid Agreements Checklist

1. Proper identification of parties

While it may seem trite, the correct parties should be identified in the Aid Agreement, which typically will not be the fire departments themselves. In most cases, the parties will be one of the following:

- a municipal government;
- a regional district government;
- an improvement district; and/or
- a First Nation.

Each party's corresponding fire department (or fire departments) also should be correctly identified and the authority of the party to enter into the Aid Agreement confirmed.

2. Powers

Fire departments do not have inherent powers to operate outside of their ordinary jurisdictions. As such, the Aid Agreement should clearly set out the powers of each of the fire departments when operating in another fire department's jurisdiction. There are two basic approaches that may be adopted:

- a responding fire department may be granted the same powers when operating in the requesting fire department's jurisdiction, as is enjoyed by the requesting fire department; or
- a responding fire department can exercise the same powers in the requesting fire department's jurisdiction as it has in its own service area.

The Consultants recommend that each jurisdiction's fire service operational powers bylaw contemplate that mutual or automatic aid may be received from another jurisdiction and responders to an aid request will have the powers granted to it under the Aid Agreement, or, if no powers are specifically granted, will have the same powers as the requesting department.

3. Authority

Each participating jurisdiction should ensure that its fire service bylaw permits it to respond extra jurisdictionally as contemplated by the Aid Agreement.

4. Types of Responses

Aid Agreements can and should be tailored to the specific needs of the participating fire departments. Such agreements can provide for responses to all calls, all the time, or can be limited as considered appropriate by the parties. For mutual Aid Agreements, the basis on which a call is to be made and the process by which assistance is requested, should be set out in reasonable detail (alternatively, the Aid Agreement can require the participating fire departments

to develop common operational guidelines which detail when and how mutual aid requests are to be made).

For Automatic Aid Agreements, it is typical to specify (often with some detail) what calls are result in automatic aid responses. The following are examples of some of the limitations that can be included:

- limited to certain call types, such as “confirmed structure fires” or fire in certain categories of buildings (high rises, industrial complexes, schools, care homes, etc.);
- limited to certain specialty services, such as technical rescue, extrication and/or hazmat;
- limited to responses during certain times of the day (e.g., between 0700 and 1800);
- limited to certain days of the week (e.g., Monday to Friday);
- limited to certain specific regions of each party’s response area (e.g., along a defined border zone of each party’s fire protection area); and/or
- limited to certain types of assistance – such as water tender support.

In each case, the parties need to develop specific response protocols – what equipment and personnel will be committed for each response type. The Aid Agreement should require the participating fire departments to develop and agree these protocols, and to review and update them (generally annually).

5. Operational Matters

The nature of the operational matters that need to be covered will vary depending on the range of responses involved. Consideration should be given to the following issues:

- specifying the minimum training levels for personnel from the responding fire department, and a common system for readily identifying each member’s training and qualifications during an incident (e.g., colour-coded helmets, or flashes);
- setting out a common approach to incident command – preferably using the Incident Command System (“ICS”) as specified in the BC Emergency Management System – including how transfers of command and/or formation of unified command will be effected. The Aid Agreement can either specify the incident command system or require that the participating fire departments’ chief officers develop an agreed approach in common operational guidelines.
- establishing any response limitations for each participating fire department based on its authorized service level, but confirming that each fire department can operate at its chosen service level.²⁶
- specifying a common personnel accountability system or requiring that the participating fire departments’ chief officers implement a common system.

²⁶ So, where one department operates at the Interior Operations Service Level, and the other at the Exterior Operations Service Level, the Agreement should confirm that Interior Operations department can operate at its higher level of service in the Exterior Operations department’s service area. This does not permit the Exterior Operations department or its members to operate at this higher level and careful thought needs to be given to how incident command is managed in such circumstances.

- requiring that the participating fire departments' chief officers develop:
 - common operational guidelines for all potential combined responses (which OGs need to include the agreed ICS, and accountability system); and
 - common communications protocols for emergency scene communications (e.g., talk groups, identification protocols, etc.).
- requiring that the parties ensure they have interoperable communications equipment, as well as (to the extent practicable) interoperable principal equipment and apparatus;
- requiring that each party undertake appropriate pre-planning of principal or major risks which may involve a combined response, and sharing such pre-plans with the other participating department(s);
- requiring that the parties undertake periodic joint training, including tabletop exercises simulating major incidents;
- setting out a process for regularly reviewing and assessing the effectiveness of combined operations (this should be done at least annually);
- setting out a process for updating response protocols and amending the list of combined events, or other limitations, that are covered by or included in the Agreement; and
- requiring a periodic (at least triennial) review of the underlying Agreement.

6. Dispatch Provider

While both mutual and automatic Aid Agreements require close cooperation with the parties' dispatch provider(s), automatic aid arrangements require particular attention. The Aid Agreement should:

- require that the relevant dispatch provider (or providers) be provided with a copy of the Aid agreement and any amendments that may be made to it, along with the corresponding dispatch protocols. The dispatch protocols will need to be developed in consultation with the dispatch provider(s); and
- ensure that the dispatch provider is invited to participate in any periodic review of the Agreement's operation or debriefings that may be held.

7. Refusing an Aid Request

The Aid Agreement should include a provision that permits a responding fire department to refuse a dispatch request (whether for automatic or mutual aid). The process by which such refusal is communicated to the requesting fire department and dispatch provider should be clearly set out in the Agreement and in each participating fire department's operational guidelines. The Consultants would suggest that the right to refuse a request should be broadly cast, to avoid potential liability concerns, though this is an issue that requires careful consideration with legal counsel.

8. Risk Allocation and Liability

The Aid Agreement should include provisions which deal with risk allocation and liability in the event that a combined response goes wrong, or gives rise to a claim. There are basically two approaches that can be taken:

- a. each party can bear responsibility for its own negligent acts and provide an indemnity to the other for claims and costs arising therefrom, to the extent of its negligence; or
- b. the requesting fire department can waive any claims it may have against the responding department and agree to indemnify the latter against any claims arising from a response into the requesting fire department's service area (barring claims for gross negligence or wilful misconduct). In our experience, the latter approach is more typical.

In addition, there should be a clear statement that a responding fire department is not liable for refusing or failing to respond (or being delayed in a response) to an aid call out, or for failing to respond with all of the apparatus and/or personnel contemplated in the dispatch protocols.

Waivers and indemnities are potentially complex. The parties should review the appropriate risk allocations internally, and consult legal counsel when preparing such provisions.

9. Costs and Fees

The Aid Agreement should address issues such as:

- claims for damaged apparatus and/or equipment;
- how WorkSafe claims are to be managed (typically, each party bears responsibility for its own members' WorkSafe claims);
- how the cost of consumables is to be managed and/or claimed; and
- if fees are to be paid, how those fees are calculated, claimed and paid.

Nothing in this document should be construed as legal advice.

All stakeholders are encouraged to retain legal counsel where such action is warranted and should review any recommendations or issues through their ordinary legal review processes.