Bowen Island
Fire Department
Core Service Review

Dave Mitchell & Associates Ltd.
3 April 2020
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Executive Summary

The Bowen Island Fire Department (the “BIFD” or the “Department”) was originally operated as an improvement district prior to Bowen Island being incorporated as a municipality in 1999. Following incorporation, the BIFD’s operations were rolled into the new municipality. The Department currently operates with slightly fewer than 30 members, and has recently moved to responding out of two fire halls. The BIFD is responsible for protecting buildings and improvements valued, in the aggregate, at over $640 million, and operates with a budget that, in 2019, was set at about $378,000. The Department responds to some 190 calls annually and provides a wide range of emergency response assistance, including fire suppression, interface responses and first medical responder aid.

The Department has undergone a number of reviews over the past two decades, including two by the Fire Underwriters (the “FUS”), in 2007 and 2013, as well as a community wildfire protection plan review in 2007. Its operations are also impacted by the risks identified in the hazard, risk and vulnerability assessment (the “HRVA”) conducted in 2018 as part of the Municipality’s emergency planning efforts.

In October 2019, Bowen Island Municipality (“BIM” or the “Municipality”) commissioned a core services review (the “Review”) and retained Dave Mitchell & Associates Ltd. (the “Consultants” or “DMA”) to conduct it. The Review commenced in early November with a goal to produce a final report with recommendations in the second quarter of 2020.

The review process included the Consultants meeting with municipal staff as well as the acting fire chief, Aaron Hanen, and the majority of the volunteer firefighters and officers. The Consultants reviewed the Department’s fire service area with the assistance of Chief Hanen to identify hazards and risks, and to develop an understanding of the particular environment in which the Department operates. This review included multiple visits to the fire halls to review the apparatus and the principal equipment used to support the Department. The Consultants also undertook a benchmark survey, comparing the BIFD to six other departments in the province.

As noted, the Consultants met on several occasions with Chief Hanen, as well as the two previous fire chiefs¹ and the volunteers. Without exception, the members of the Department spoke with passion about their commitment to their role as firefighters and offered every possible assistance with the Review. As well, the Consultants met regularly with BIM senior staff to obtain background documentation and to discuss the status of the Review and issues affecting the Department. The staff involved were candid in their discussions, and focused on addressing the requirements of the Review and the needs of the Department. The Review examined the principal operational and administrative aspects of the Department, from training and operations, to budgets, bylaws and mandate, standard operating guidelines and response patterns.

¹ Brian Biddlecombe and Ian Thompson.
The issues facing fire services in BC are complex regardless of the size of the department. All fire departments are affected by the increasing demands placed on them by the growing list of regulatory requirements. The operation and deployment of a fire department, whether volunteer, composite or career², has become more complex in recognition of its high risk. The provision of fire services by local governments is optional and the service limits are defined and controlled by the grant of powers in relevant establishment and operational bylaws. The Department's bylaws require updating, both to address changes in the regulatory structure under which it operates and to complete the transition from its inception as an improvement district to a service operated by local government.

Bowen Island is also a challenging physical environment in which to provide a fire service. The Island has an area of some 50 square kilometres, and presents a challenging topography. It is serviced in many areas by narrow and very steep roads, it has a significant number of properties that present material access challenges and it has multiple water systems, only some of which are recognized for firefighting purposes. In addition, there are a number of areas without fire hydrants. The Island's road network has a single road (Grafton Road) connecting the Cove area with the south and south-west side of the Island. The road network is also such that a minimum of two fire halls are required and this was recognized by previous fire chiefs and the FUS and this resulted in the construction of Hall 2. Providing a fire service on Bowen Island is also challenged by the lack of any immediate mutual aid, similar to other island communities like Gabriola Island and Pender Island which provide reasonable benchmarks, and which must rely on being self-sufficient at least in the near term.

This Review discusses the full range of issues facing the Department along with identifying a number of priorities. These priorities include the need to confirm members’ training and qualifications, upgrading certain skills and qualifications, updating approaches to occupational health and safety, implementing a compliant system of regular inspections of commercial properties, and updating or replacing certain apparatus.

In relation to training and qualifications, the mandatory minimum requirements for training are set out in the Office of the Fire Commissioner’s Playbook.³ Training for firefighters in British Columbia is determined by the level of service the Department provides. The Playbook specifies three possible levels of service – Exterior, Interior and Full Service – and the minimum training standards that accompany each level of service. Regardless of which level of service is authorized by the “Authority Having Jurisdiction” (the “AHJ”), the required training must be thoroughly documented and recorded to include the particular subject, details with regard to what was taught, and the assessment of each firefighter to confirm competence. Some portion

² The terms volunteer, composite and career refer balance of full-time and volunteer fire fighters. Career fire departments are those where all members are full time such as West Vancouver; volunteer departments are those in which all except for the fire chief respond as volunteers such as Bowen Island or Roberts Creek and composite departments are those with a combination of each, an example being Maple Ridge.

of the required training also must be periodically reviewed and refreshed, which maintenance training must also be part of an available training record.

The Department, which has been declared as operating at Interior Operations service level, is developing a plan to identify the training levels of each of its members and officers, and to create a program that will enable them to bridge any gaps that are identified. This work was being undertaken contemporaneously with this Review. Among other things, it will require that the Department’s training officer position be filled and that prior learning assessments for a number of the members be undertaken. This should result in clarity about the current level of members’ training, as well as fill in any gaps in existing training records and better enable the Department to address any identified shortcomings. To be clear, this is not a statement that members have not been trained in the past; there is evidence of a considerable amount of training by various providers. Rather, the absence of substantive records makes the determination of actual training levels very difficult, and poses a potential risk if the issues are not addressed.

It is noted in this Review that the Department, like many volunteer and paid-on-call departments in the province, has been challenged at times with meeting all of its administrative responsibilities, including proper records keeping as required by WorkSafe BC and the Playbook. The Department has begun to use a web-based records management system and is to be commended for that. This system should allow for off-site backup as well as easy access to confirm training and other requirements. That said, there is a considerable quantity of previous paper-based records to be retrieved and entered into the new records management system and we are recommending that the Department receive funding for some additional level of administrative support, similar to other fire departments in the benchmark group. This may translate into two days per week once a steady-state has been achieved and all previous records have been checked and correctly entered into the system. For an interim period, however, the need for administrative support may be greater.

The bylaw governing the Department and its operations was inherited from the improvement district. It has not yet been updated, and needs to be revised to account for a number of different matters, including the implementation of an appropriate fire inspection regime for commercial and public buildings. As part of that updating process, we also are recommending that the Department and its members review with elected officials and BIM staff, the list of services provided by the Department. To the extent that specialty services – ranging from technical rescue to hazmat responses – are to be provided by the Department, it will require additional training for members and funding from the Municipality. The Department and BIM also need to plan for the eventual proclamation of the Fire Safety Act, which will affect the requirements for fire inspections and fire investigations, and change the way certain powers are given to fire chiefs and local governments.

As noted earlier, the geography and the physical environment of Bowen Island present challenges relating to the deployment of staff and apparatus to incidents. The number of incidents responded to by the Department continues to rise and its deployment model is examined in the Review. The requirement for a two-hall response model was recognized
previously and was clarified by the Fire Underwriters. This approach is critical because there is no single location on the Island from which all single-family residences, and the principal commercial zones, would be treated as “protected” under the Fire Underwriters system – which can materially impact the cost of insurance for those structures outside of the zones that are rated as protected.

Hall 2 on Adams Road provides appropriate coverage for residences in the south and west portion of the Island, while the new location for Hall 1 will provide similar coverage for the north and east side of the Island as well as the north-west side. As we worked through these issues with the Department leadership, they developed and have implemented a plan to provide responses out of Hall 2. In this Review, we have recommended the Department develop a response capability from both fire halls with an Engine, a Mini-pump and a Tender in each. The single Rescue vehicle should continue to operate from Hall 1 in both its current location and the proposed new location on Miller Road.

In terms of the budget, there are a number of initiatives identified for the near term which will require discussion as to timing and final priority. Compared with similar fire departments in the benchmark survey, the BIFD’s overall funding is low compared to the benchmark group. In the immediate term, addressing the training and qualification uncertainties that have been identified will have the biggest impact on the Department’s budget needs, as external assistance will be required to address the challenges noted.

As part of the budget review, the issue of how best to compensate Department members was considered. The present practice of providing a benefits package, but no training or call-out pay, presents some challenges – including who should qualify for such benefits, how best to incentivize members to attend additional or weekend training sessions, how to compensate members for taking on additional administrative responsibilities and whether to pay for call-outs. These issues need to be explored in greater detail, in the context of developing a broader, long-range strategic vision for the Department, in consultation with its members, elected officials and BIM staff.
Summary of Recommendations

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

Regulatory Matters

Recommendation: BIM needs to develop and implement a fire inspection program in accordance with the requirements of the Fire Services Act. We recommend that, for an interim period while the Department is dealing with the training and other operational and administrative matters identified in this report, the Municipality retain the services of a third party to conduct such inspections. We would recommend that, as this third-party conducts inspections, it works with the Department to:

(a) undertake risk analyses to inform the future inspection program under the Fire Safety Act; and

(b) review and update the Department’s existing body of pre-incident plans.

Recommendation: If BIM intends to charge a cost-recovery fee for conducting fire inspections under the Fire Services Act, it will need to make provision for such fees by bylaw.

Recommendation: BIM, in consultation with the Department and its members, needs to develop an updated fire services operational and fire prevention bylaw. We have identified in this report some of the principal operational and administrative issues that need to be addressed, including powers, authority, reporting lines, and responsibilities. BIM will need to take a view as to whether to develop such bylaw under the existing Fire Services Act or develop one that anticipates the new Fire Safety Act – and hold off passage of the updated bylaw until that new act comes into force.

Recommendation: BIM and the Department should explore the possibilities of formalizing arrangements with other Metro Vancouver municipalities and fire departments relating to the provision of aid in the event of a major emergency on the Island.
Staffing and Training Review

Staffing Recommendations

**Recommendation:** The Fire Chief should review the attendance records with all members and then engage all members to co-develop a strategy to increase the overall attendance for practices and response.

**Recommendation:** The current number of fire personnel should be increased to improve effective response coverage deployment from two fire halls and to manage large scale emergencies as there is no mutual aid readily available to support the BIFD if needed.

**Recommendation:** Consider increasing the Deputy Fire Chief and Training Officer FTE level to better manage administration and training responsibilities.

**Recommendation:** The Department should increase the number of volunteer firefighter positions ensure adequate resources are available for responses to multiple or large incidents.

Training Recommendations

**Recommendation:** The Department should receive funding for an administrative support position. This may translate into two days per week once a steady-state has been achieved and all previous records have been checked and correctly entered into the system.

**Recommendation:** In the short term, the Department needs to appoint a Training Officer. The individual appointed to this role initially would be responsible for managing and designing weekly training, and helping the Fire Chief and Deputy Fire Chief to organize the external training and qualification reviews described below.

**Recommendation:** The Department needs to develop detailed job descriptions and corresponding training and qualification requirements for all positions, from recruit firefighter through to and including the various officers’ positions.

**Recommendation:** The Department’s operational guidelines need to be updated to ensure that they meet current statutory and regulatory requirements, and properly cover all aspects of incident scene activities for an Interior Operations service level department. The OGs also need to cover all additional specialty services provided by the Department.

**Recommendation:** The Department needs to implement an appropriate records management system to record and manage all training activities for each member of the Department. The Department will likely require some short-term
assistance to set up such system, and to gather and input existing records into the RMS.

**Recommendation:** The Department should continue to work with the members to gather details of all externally-granted training certifications and qualifications (i.e., from third-party training entities).

**Recommendation:** The Department should conduct a gap analysis of existing recorded training qualifications for each member. In consultation with the members, it will need to identify the most effective means of confirming members’ qualifications (i.e., through PLAs or additional training) where the existing records are insufficient. From that review, it should develop a plan for bridging the identified gaps, and obtain approval of same from BIM. It seems likely that external training providers will need to be retained to deliver the programs initially. However, as part of the training processes, the Department should undertake a “train-the-trainer” approach, and develop the necessary qualifications for its members to deliver most regular and maintenance training in-house.

**Recommendation:** As qualifications are confirmed or established through the external processes, the Department should establish a long-term training program to ensure that all members are trained and qualified to carry out their assigned duties. This includes developing a recruit, firefighter and fire officer program.

**Recommendation:** In consultation with the members, and with BIM staff and elected officials, the Department should review the current service level declaration. At present, the existing records indicate that the Department can only safely operate at the Exterior Operations service level. The service level declaration may remain at Interior Operations, provided that there is a temporary restriction on conducting interior operations until training and qualification levels are confirmed. Alternatively, the service level can be changed to Exterior Operations, and upgraded once training and qualification levels for Interior Operations are confirmed.

**Recommendation:** The members and officers of the Department, in consultation with staff and BIM elected officials, should review the breadth of the Department’s service mandate. Where specialty services – such as specialized fire suppression (e.g., marine), hazmat or various technical rescue services – are to be delivered by the Department, a plan will need to be developed that:

(a) identifies the specialty service and level to which it is to be provided;

(b) sets out the training and qualification requirements, and a plan for obtaining initial qualification and any maintenance training;
c) identifies any special equipment requirements; and

d) sets out the costs of providing each such service.

**Occupational Health and Safety**

**Recommendation:** The OH&S program, as reflected in the Department’s policies and OGs, needs to be updated. This updating process should include members of the Department as well as BIM human resources staff.

**Recommendation:** The Department needs to operate a separate joint committee as required by s. 31.3 of Part 31 of the OH&S Regulation. This joint committee must include both worker and employer representatives. In relation to the operation of this committee, BIM, in consultation with the Department and members, should determine:

- whether the individuals who participate on the committees should be remunerated for the time they will be required to commit – perhaps with a separate monthly stipend, plus an hourly rate in the event that the joint committee has to undertake an accident investigation or similar enquiry;

- where training is required for committee members, BIM should consider setting a compensation rate for members and officers who are required to take this training.

- where possible, the regular monthly meetings of the joint committee could be timed to occur at the end of the one of the regular practice nights.

**Recommendation:** BIM should make application to WorkSafe BC for permission to operate a single joint committee covering both Hall 1 and Hall 2.

**Recommendation:** BIM should work with the Department to develop the records keeping practices and systems necessary to meet OH&S requirements and best practices, for all Department operations.

**Fire Prevention**

**Fire Inspections**

**Recommendation:** To support a compliant fire inspection program the following actions are recommended:

- identify the minimum training requirements for fire inspectors;

- provide training to the Fire Chief and one alternate;

- conduct a risk analysis of buildings to determine the frequency and nature of inspection requirements (it may be necessary to out-source this work);
• develop an operational guideline for a fire inspection program; and
• create a filing system for inspection reports, follow ups and enforcement actions.

Fire Investigations and Fire Reporting

Recommendation: To support a compliant fire investigation program the following actions are recommended:

• identify the minimum training requirements for fire investigators;
• provide investigation training to the Fire Chief and any designated investigators;
• develop an operational guideline for fire investigation and OFC reporting;
• develop an operational guideline for internal post-incident reporting; and
• ensure there is a system of records retention for investigation and incident reports.

Public Education

Recommendation: Identify key public education programs and create an operational guideline in support of those activities.

Recommendation: BIM should consider the creation of a part or full-time fire prevention officer position to address the need to develop and implement a fire inspection system, to conduct fire investigations and carry out the related fire reporting to the OFC, and to address the issues identified in the 2007 Community Wildfire Protection Plan.

Incident Pre-Planning

Recommendation: That the BIM add a requirement for the Department to review all business licence applications and renewal requests.

Recommendation: When the Department receives a business licence for its review, the Department will take action to ensure the premise has a current fire inspection and pre-incident plan.

Recommendation: The Department amend its operational guidelines to include a process to ensure that when a fire inspection is undertaken a pre-incident plan is created or updated for that premise.
Budget Analysis

Operating Budget

Recommendation: The Municipality should undertake a review of the current total compensation rates for all Department volunteer positions with a view to aligning compensation levels with Policy #01-05, the emerging trends for recruitment and retention in volunteer fire departments and the current labour market conditions on Bowen Island.

Recommendation: The Municipality should engage the members of the Department to communicate the findings of the compensation review and explain any changes to the current program.

Capital Budget

Recommendation: The Department should review the current requirements for new apparatus based on the service delivery plan and develop specifications that can be used in the drafting of a Request for Proposal.

Recommendation: The Department and BIM staff review the anticipated costs for the replacement vehicles and develop budgets reflecting the outcome of such review.

Strategic Planning

Recommendation: BIM and the Department should develop a five-year strategic plan for fire protection services. The plan should address current and emerging trends and be linked to the operating and capital budget process.

Response Analysis

Recommendation: The Department should review and track its new deployment model from Hall 2 and make such refinements as are required to meet its deployment needs and any issues that may surface from having a portion of its members now respond from that Hall.

Hazard, Risk and Vulnerability Assessment

Recommendation: The Department, to the extent that it is a primary responder to events or risks identified, should adopt and implement the recommendations as set out in the 2018 HRVA assessment.
Terms of Reference

The Terms of Reference for the core services review for the Department were agreed by contract on 31 October 2019 and contained in Schedule A as follows:

The independent core service review of the Bowen Island Volunteer Fire Department will include, but is not limited to, the following components:

1. Assessing the capabilities of the department.
2. Confirming the level of service circumstances (currently exterior).
3. Determining the apparatus and equipment requirements.
4. Determining training requirements, cost and duration of training.
5. Evaluating fulfilment of Provincial training regulations.
7. Reviewing current compensation methods.
8. Reviewing the BC Fire Commissioner’s Inspection and Audit Checklists.
9. Review of the recommendations provided by the Fire Underwriter Survey (FUS).
Regulatory Matters

Introduction

When examining the legal structures in place for the BIFD, it is essential to understand that fire departments are an optional service created by local governments. As such, unlike police and ambulance, which are established under and/or operate pursuant to provincial statutes and have a uniform range of powers throughout the province, a fire department only has the power and authority granted to it under the local bylaw that creates and defines its operational responsibilities. Care must be taken, therefore, to ensure that a fire department has the full range of powers needed to respond effectively to incidents within its jurisdiction.

Similarly, there is no standard range of services defined for a fire department. A 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 available to local government, we recommend that both the grant of powers and authorization to respond to incidents be very broadly cast, but that their exercise be made subject to training and the availability of necessary personnel and equipment.

Recommendations arising from this review of regulatory matters are gathered at the end of this section of the report.

It should be noted that nothing in this report constitutes legal advice. BIM should review any analyses or recommendations related to, or impacted by, statutory or regulatory matters, through its ordinary legal processes.

Bylaw Review

The Department’s bylaw structure is dated and, in our experience, unique. The Department’s origins trace back to 1968, when the “Bowen Island Fire Protection District,” was established by letters patent under Order-in-Council 2940.⁴ The improvement district was authorized to provide fire protection and undertake “the acquisition, maintenance, and operation of works, buildings, and equipment for that purpose and all things incidental thereto.”⁵ The letters patent were amended four times: in 1972, the Department was authorized to provide ambulance services; in 1989, the improvement district board was granted the powers of a municipal council under the Municipal Act; in 1990, the number of trustees was increased by one; and in 1996, the power to provide ambulance services was removed.⁶

⁴ OIC 2940, 28 September 1968, at: http://www.bclaws.ca/civix/document/id/oic/arc_oic/2940_1968. The Bowen Island Fire Protection District is an improvement district, which is a form of local government.
⁵ Ibid., at s. 3.
BIM was incorporated as a municipality under letters patent (the “Letters Patent”) with effect as of 4 December 1999.\(^7\) The integration of the Department into the new municipality was contemplated by the discussions and reports which led up to the incorporation.\(^8\) It also was required under Provincial policy.\(^9\) Under the terms of Order-in-Council 1160, the Bowen Island Fire Protection District was dissolved, and all of its assets and liabilities were transferred to BIM. Significantly, all bylaws of the improvement district were “declared to be bylaws of the Bowen Island Municipality.”\(^10\) These issues were further addressed in the body of the Letters Patent,\(^11\) which also provided that the reserve funds from the improvement district were to be held in a separate reserve fund by the Municipality, and used only for the fire service.\(^12\) Finally, the Letters Patent established a short-term transitional advisory committee, comprising the former trustees of the improvement district along with any other individuals appointed by BIM, that was to operate until at least the end of April 2000.

As a result of the provisions of the OIC and Letters Patent, the bylaws that had been passed by the Bowen Island Fire Protection District became bylaws of BIM. In 1993, the improvement district passed *Bowen Island Fire Protection District Fire Regulations Bylaw No. 41, 1993* (“Bylaw No. 41”). This bylaw addressed a series of issues necessary for the Department’s establishment and operation, in a format that was common for the time. This bylaw has never been updated or superseded. Given the bylaw’s age, and the widespread recognition that it requires replacement and updating, we are not proposing to conduct a detailed review of its provisions in this report. However, at a high level, Bylaw No. 41 covers the following range of matters directly relevant to the Department and its operations:

- it deals with the establishment and organization of the Department (including the appointment of the Fire Chief by the Board);
- it sets the Department’s jurisdictional limits;

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\(^8\) See, for example, Sussex Consultants Ltd., *1999 Bowen Island Restructure Study* (April 1999) at pp. 49 – 50; and 61.


\(^10\) OIC 1160, s. 6.

\(^11\) On dissolution and the assignment of assets and liabilities, see the Letters Patent, ss. 25.0 and 25.1; on bylaws, see s. 25.2.

\(^12\) Letters Patent s. 25.3. The reserve fund was duly established by BIM under Bylaw No. 12, adopted on 8 May 2000 (discussed below). This reserve fund still exists and is used solely for fire service purposes.
• it defines the Fire Chief’s responsibility and authority over the Department (subject to the Board’s direction) and authority to discipline members;
• it sets out the range of services the Department is authorized to provide;
• it sets out various operational powers (including entry onto property or adjacent properties, in connection with an incident; the right to tear down buildings, structures or things to prevent the spread of fire; the right to conduct fire inspections and investigations;13 and the power to establish an exclusion zone around an incident); and
• it specifies a series of potential offences arising from individuals interfering with the Department’s emergency operations.

In addition to the Department’s administrative structures and operational powers, Bylaw No. 41 addresses a wide range of what may be loosely categorized as “fire prevention” matters, including:

- proper management of fire escapes, exit doors, chimneys, ashes, open flames and combustible materials (ss. 29 – 41);
- open air and other burning restrictions (ss. 45 – 60); and
- proper storage of gasoline and similar compounds or liquids (ss. 61 – 63).

In connection with the management of fire hazards, the Fire Chief is granted authority to enter “any premises” to ensure compliance with the bylaw (s. 64).

Any person who violates a provision of Bylaw No. 41 commits an offence and is subject to a fine of up to $2,500 or six months’ imprisonment or both (s. 65).

As it stands Bylaw No. 41 is outdated and gives rise to certain interpretation problems when trying to apply its provisions in a municipal context. The need to update the bylaw was identified as early as 2001,14 and attempts were made in 2006, 2008 and 2009/10 to create a replacement. For reasons which are not clear on the record, none of the previous attempts to update the bylaw were successful. In 2018, the issue surfaced once again when the RCMP noted, during a meeting of the Emergency Program Management Committee, that the bylaw was badly out of date, making it difficult to deal with matters such as illegal beach fires.15

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13 While a minor issue, the investigatory powers related to an incident are not well developed, as the powers do not apply to privately-owned single-family residences – see s. 20(iii).
14 BIM, Committee of the Whole, Minutes 9 July 2001, p. 6/8. The issue was raised by the Fire Chief of the day, in connection with concerns being discussed regarding outdoor burning.
15 Emergency Program Management Committee, 6 June 2018.
July 2018, the Emergency Program Coordinator was made responsible for managing the development of a new bylaw, assisted by the Fire Chief and Council Clerk.16

In addition to problems arising from age and possible interpretation issues, Bylaw No. 41 fails to address some of the statutory obligations of a municipality. Under ss. 26 and 36 of the Fire Services Act, municipalities are required to implement a “regular system of inspections” for hotels, public buildings and “buildings” (as defined).17 This obligation, however, is particular to municipalities and does not apply to unincorporated areas (as was the case for Bowen Island prior to 4 December 1999). As such, there are no provisions in Bylaw No. 41 addressing the establishment and operation of a regular system of inspections within BIM, and no additional bylaw has been passed addressing this issue. While the Fire Chief (or designate) has the power to conduct inspections on an elective basis under section 20 of Bylaw No. 41 (and from his or her powers as a Local Assistant to the Fire Commissioner (the “LAFC” or “Local Assistant”) under the Fire Services Act), the Municipality has not established a functioning regular system of inspections of commercial and public buildings.

The situation surrounding the development of an appropriate inspection system has now become more complex, as the Province is in the process of transitioning from the existing Fire Services Act to the new Fire Safety Act, which creates a somewhat different regime for fire safety inspections (among other things). Both systems are described below, along with a discussion of the statutory fire investigation and reporting obligations that exist, but which are not currently being met fully by the Department or BIM. In addition, the Fire Prevention section of this report examines some of the history of the Department in relation to this obligation.

Fire Services Act

LAFC System

Before examining the inspection and investigation obligations under the Fire Services Act, it is necessary to understand the operation of the LAFC system. The LAFC system is the modality by which certain powers are granted and responsibilities assigned under the Fire Services Act. Under paragraph 6(1)(a), in a municipality with a fire department, the fire chief is automatically designated as the LAFC.18 LAFCs have the powers of a peace officer for the purposes of the Fire Services Act,19 and may exercise various powers of the Fire Commissioner under sections 20 and 21, and (with the Fire Commissioner’s consent) section 23.20 LAFCs have the power to

16 The assignment was given in July 2018 at the Emergency Program Executive Committee (“EPEC”) meeting and the EPEC minutes of 19 December 2019 still lists this as an “Actionable Resolution.”
17 There is significant overlap between the two sections. The term “building” in section 36 includes a “hotel, public building, church, theatre, hall or other building used as a place of public assembly.”
18 Bylaw No. 41, which is originally a bylaw of an improvement district, designated the Fire Chief to be the LAFC – although, technically, this designation is subject to approval by the Fire Commissioner.
19 Fire Services Act, s. 7.
20 Fire Services Act, s. 24.
undertake fire inspections, including on complaint or if they deem it advisable, and the duty to undertake and report on fire investigations in their assigned service areas.

A municipality may authorize persons other than the LAFC to exercise the powers of an LAFC under the Fire Services Act in relation to the inspection of buildings. In addition, under paragraph 6(1)(c), the Fire Commissioner may also appoint additional LAFCs, and typically will do so at the request of a municipality. Under Bylaw No. 41, however, only the Fire Chief has been appointed as an LAFC and we are not aware of any other appointments within BIM.

It should be noted that the LAFC role is not being continued in the new Fire Safety Act. Powers, duties and responsibilities are being addressed in a different fashion and LAFC badges will have to be returned to the Office of the Fire Commissioner (the “OFC”) once the new statute comes into force.

Fire Inspections

Under sections 26 and 36 of the Fire Services Act, municipalities are required to implement a “regular system of inspections” for hotels, public buildings and “buildings” (as defined). The phrase “regular system” is not defined in the statute. In general, it is open to a municipality to define what constitutes such a system, and to determine the appropriate inspection frequency for different classes and risks within its boundaries. The OFC has issued guidelines in the past dealing with inspection regimes. In 1992, it issued its Interpretive Guide: Criteria for Determining Frequency of Inspections (the “1992 Guide”), which set an inspection frequency that, in our experience, no municipality meets. The 1992 Guide used the Fire Code classification system and a high-level risk assessment to set recommended inspection frequencies. The longest inspection frequency for the lowest risks was set at 12 months; otherwise the OFC called for inspections to occur every two to six months depending on building classification and use. A mid-1990s review of the 1992 Guide by the City of Abbotsford found that none of the benchmark cities studied were following the inspection frequencies recommended by the OFC.

21 Fire Services Act, s. 26(2) and 36(1).
22 Fire Safety Act, s. 55.
23 There is significant overlap between the two sections. The term “building” in section 36 includes a “hotel, public building, church, theatre, hall or other building used as a place of public assembly.”
25 1992 Guide, p.5. For example, buildings classified A-2 (night clubs/licensed beverage establishment) and B-2 (nursing homes) were recommended to be inspected every two months; schools (A-2) and distilleries/spray operations (F-1) were to be inspected every three months; restaurants (A-2) – every four months; and theatres (A-1), churches (A-2), day-cares (A-2) and arenas (A-3) were to be inspected every six months.
As the 1992 Guide provided unrealistic recommendations as to inspection frequency, municipalities have, in our experience, generally adopted an annual inspection cycle. This frequency is then occasionally modified to deal with local circumstances: known high-risk buildings or undertakings often are slated for more frequent inspections while, in some cases, lower risk properties are inspected on a more extended cycle. For example, the City of Prince George, for its “standard risks” uses an annual, biennial and triennial inspection cycle depending on risk.\(^\text{27}\) For its high-risk sites (e.g., major industrial, refining or chemical operations) it increases the frequency. In general, however, the standard that seems to be applied more generally by local governments is to target annual inspections of all inspectable properties.

The OFC’s 2014 training materials for LAFCs seems to endorse this approach: these materials define a regular system of inspections as being:\(^\text{28}\)

> “Annual” or as recommended by the local government and by the frequency of the inspection policy.

In 2015, the OFC endorsed and collaborated on the creation of a guide by the Fire Inspection and Prevention LAFC Inspection Working Group Sub-Group, entitled: *BC Fire Services Act: Regular System of Inspections – Considerations for Development* (January 2015) (the “2015 Guide”).\(^\text{29}\) The 2015 Guide did not set a specific frequency schedule. Rather it noted that the local government needed to engage in a risk management exercise and determine inspection frequency based on a series of factors, including:\(^\text{30}\)

- building classification;
- local conditions and circumstances;
- age, condition and level of compliance; and
- staffing levels within the fire prevention division.

The 2015 Guide suggested that some inspection frequencies could be extended if a self-assessment system was also instituted for the non-inspection years. It noted, however, that a self-assessment system, on its own, was not thought to meet the requirements of the *Fire

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\(^{27}\) The risk assessment is principally driven by the building classification, though it may be modified by fire prevention staff based on experience and local knowledge (e.g., previous compliance issues, building age, etc.).


\(^{30}\) 2015 Guide, at pp. 18 – 19.
The 2015 Guide recommended that local governments adopt a risk-based approach to setting inspection frequency, a view that is fully reflected in the new Fire Safety Act, as will be discussed further, below.

The 2015 Guide also reviewed the need to ensure that individuals charged with carrying out inspections are properly trained for their roles. For persons fulfilling the LAFC role, as a minimum, completion of the OFC’s training program should be required. In relation to inspectors, the 2015 Guide states:

They [inspectors] should be knowledgeable in:

i. The relevant sections of the Fire Services Act
ii. The BC Fire Code Regulation and the BC Fire Code
iii. The Local Government’s related bylaws and enforcement mechanism
iv. The basics of conducting a Code compliance inspection

From BIM’s perspective, it has a statutory duty to carry out fire inspections. There is a risk that a local government, which has failed to implement an appropriate system or failed to provide a service which meets reasonable standards for fire inspections, could face potential liability in the event that a fire occurs, and the hazard giving rise to the incident was not found as a result of an inadequate or non-existing system, or a negligent inspection. It also is technically an offence under the Fire Services Act not to operate a system of inspections as required under that statute.

Fire Investigations

Under the Fire Services Act, fire-cause investigations are required to be carried out and reported on by LAFCs. A municipality may also provide separately, by bylaw, for fire investigations. Section 9 of the Fire Services Act provides as follows:

Investigation of fires

9 (1) To ascertain whether a fire was due to accident, negligence or design, a local assistant must, within 3 days after the fire, excluding holidays, investigate or have investigated in a general way the cause, origin and circumstances of each fire

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33 Fire Services Act, s. 48(1) permits municipalities to make bylaws “relating to a matter within the scope” of the Fire Services Act, provided such bylaw is not “repugnant to” the act.
(a) occurring in the municipality, district or part of British Columbia for which he or she is a local assistant, and

(b) destroying or damaging property or as a result of which death has occurred.

(2) Immediately after an investigation under subsection (1), the local assistant must submit to the fire commissioner a report containing

(a) all facts ascertained about the cause, origin and circumstances of the fire, and

(b) any further information required by the fire commissioner.

(3) The report required under subsection (2) must be submitted in a format and by the means approved by the fire commissioner.

Broad powers of entry to conduct investigations are provided for in subsection 10(1), and the right to require the production of information by owners, occupiers and residents or employees at an affected site, is covered by subsection 11(2). Under section 13, a preliminary report of fires of a “suspicious origin” must be made to the Fire Commissioner by the LAFC (and by any interested insurer) containing certain prescribed details and information.

There is no useful guidance provided by the OFC on what it expects in relation to fire investigations, though it does identify what constitutes a reportable fire. A reportable fire includes:

Table 1: OFC Reportable Fire Types

<table>
<thead>
<tr>
<th>Structural Fires</th>
<th>Vehicle Fires</th>
<th>Outdoor Fires</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buildings</td>
<td>Cars and trucks</td>
<td>Dumpsters</td>
</tr>
<tr>
<td>Piers</td>
<td>Trains, boats, planes</td>
<td>Playground equipment</td>
</tr>
<tr>
<td>Decks and Patios</td>
<td>All-terrain vehicles</td>
<td>Telephone/hydro poles</td>
</tr>
<tr>
<td>Parkades and covered</td>
<td>Recreational vehicles</td>
<td>Grass/bark mulch</td>
</tr>
<tr>
<td>parking lots</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

34 Sections 10 and 11 cover fires at “a building, premises, motor vehicle, vessel or railway rolling stock.”

It should be noted, moreover, that LAFCs, when performing their duties in relation to investigations, are arguably working for the Fire Commissioner and not the local government.36

Bylaw No. 41 is largely silent on investigations. The Fire Chief is made responsible for all “Fire Protection” matters (which is defined to include investigations),37 and, under both the bylaw and the Fire Services Act, is the LAFC for the jurisdiction. As such, since the inception of the Municipality, the Fire Chief has had the obligation to undertake investigations of fires within BIM and report on same to the OFC. As noted above, section 20 of the bylaw gives the Fire Chief investigative powers, but that section excludes single family residential dwellings (which appears to be a drafting error, at least in relation to fire investigations).

The investigation requirements in section 9 of the Fire Services Act are broadly and generally stated. There are no express provisions dealing with training requirements for LAFCs conducting fire investigations – though, as noted above, any person appointed as an LAFC should, as a minimum, take the OFC’s training course. From a practical perspective, the level of investigation should be tailored to the nature and extent of the incident. Where there is significant property damage, or injuries or death, a more detailed investigation is appropriate. However, for small incidents (e.g., roadside grass fires), the time allotted for such work can and should be restricted, unless, in the course of review, some other issue (e.g., suspicion of arson) comes into play.

The Department has not reported all of the fires covered by the OFC guidelines noted above.38 The Department has not developed any operational guidelines (“OGs”) dealing with fire investigations: there is a place marker for such an OG (it would be OG #2.26), but it has not yet been created. OG #2.28.02 notes that a “fire watch” should be established in connection with any incident where there is a need to, among other things, “Protect the scene for investigation.” Recommendations related to fire investigation issues are found in the “Fire Prevention” section of this Review.

New Fire Safety Act

Given the current state of Bylaw No. 41, we typically would recommend that it be immediately replaced by an updated bylaw. The situation, however, is somewhat in flux, as a result of the

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36 Section 12 provides for the remuneration of LAFCs for undertaking fire investigations and the OFC website states that “Local Assistants to the Fire Commissioner … act as agents of the Fire Commissioner.” See: https://www2.gov.bc.ca/gov/content/safety/emergency-preparedness-response-recovery/fire-safety/training/lafc-intro-course#targetText=Local%20Assistants%20to%20the%20Fire%20Commissioner%20act%20as%20agents%20to%20your%20area%20of%20jurisdiction (accessed 20 January 2020). The situation becomes more complex when a local government separately provides for fire investigations under its bylaws.

37 Bylaw No. 41, ss. 1, 8 and 10. He is also given authority under Bylaw No. 41 to enforce the Fire Services Act and its regulations (which includes the Fire Code).

38 The Department reports that, since 2016, it has filed four fire reports, covering three structure fires and one car fire.
relative imminence of the new *Fire Safety Act*. The *Fire Safety Act* received third reading in May 2016, but it has not yet come into force. The OFC is in the process of completing the regulations and policies which are needed before the statute can come into effect. It is unclear when these processes will be finalized. More significantly, in a 2018 letter from the Minister of Public Safety and Solicitor General to the Union of BC Municipalities, the Province announced that it was going to amend this new statute in a way that will materially impact the obligations of regional districts.\(^3^9\) These potential amendments, and on-going discussions between the Province and regional districts regarding their implications, have further delayed the statute from coming into effect.

However, once the new act comes into force, it will materially affect BIM’s obligations with respect to fire inspections and fire investigations. As such, it may be worthwhile to prepare an updated bylaw which is consistent with the new statute and await the *Fire Safety Act*’s proclamation before bringing that new bylaw into force.

This section of the report examines the effect of the new *Fire Safety Act* and its implications for BIM and the Department. When the new *Fire Safety Act* comes into effect, it will replace the existing *Fire Services Act*. At a high level, this new statute impacts the following principal matters relevant to BIM and the Department:

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

### Fire Inspections

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

- fire safety inspections; and
- fire safety assessments.\(^4^0\)

Following a transition period, “fire inspectors” will need to meet the training and proficiency requirements specified by the Fire Commissioner.\(^4^1\) Those requirements, which are expected to be similar in format to the Playbook, have not yet been issued. However, these new training requirements will potentially impact the training of Department officers and members, who will have to meet the new standards if they are to be made responsible for fire safety inspections.

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\(^3^9\) Letter, Farnworth (Minister of Public Safety and Solicitor General) to Booth (President, Union of BC Municipalities), 30 July 2018.

\(^4^0\) *Fire Safety Act*, s. 20. The term “public buildings” is defined in s. 1.

\(^4^1\) *Fire Safety Act*, s. 8(2). The transition period is provided for in s. 53.
The new provisions mean that the Department will need to conduct risk assessments of public buildings within its service area. Those assessments will need to comply with the (yet to be issued) regulations under the *Fire Safety Act*. An inspection regime will then need to be developed based on the risk assessments that are conducted. Conceptually, the *Fire Safety Act* moves away from the existing “regular” inspection requirements, where, in practice most jurisdictions seek to inspect all properties annually, and heads towards a more flexible regime, where inspection frequency is based principally on risk. Under this approach, higher hazard or non-compliant properties should be subject to more frequent inspections, while lower risk, compliant properties can be inspected less frequently (perhaps coupled with intervening self-assessments by the owners during the non-inspection years).

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

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

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

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42 *Fire Safety Act*, s. 20(1)(b).

43 For opposing views, see the 2015 Guide at p. 8 (suggesting such a system, on its own, is not compliant with the *Fire Services Act*); versus: L. Staples, Q.C., “Opinion letter to Fire Chiefs’ Association of British Columbia,” dated 30 Aug. 2012, which holds that such a system of self-inspections can be implemented in compliance with the existing *Fire Services Act* requirements.

44 *Fire Safety Act*, s. 21(1).

45 The power is specifically limited in s. 10(2) to exclude private dwellings, unless a warrant has been obtained.
Under ss. 20(2) and (3) of the _Fire Safety Act_, BIM may, by bylaw, charge “a reasonable fee” for conducting a fire safety inspection required by the new Act. Subsection 20(4) specifies the criteria which may be applied when setting such fee.

Given that currently there is no formal fire inspection process in place, the Department will not be able to rely on any previous assessments of buildings to help determine risk levels for inspection purposes. As such, it will need to undertake risk assessments of buildings in the Municipality to develop its inspection program under the _Fire Safety Act_. Alternatively, as suggested in the recommendations below, BIM should consider retaining a third party to conduct the initial round of inspections, in accordance with the _Fire Services Act_, and during that inspection process conduct a risk analysis and update the Department’s pre-incident planning (which is discussed in the Fire Prevention section of this report).

It should be noted that there is value in having the Department and its members ultimately made responsible for undertaking fire safety inspections, rather than indefinitely contracting this role out to a third party. First, it provides an opportunity for Department members and officers to conduct regular familiarization tours of the more complex buildings to which they may have to respond. Second, it provides a ready pathway (discussed more below) that will enable the Department to update pre-incident plans for responding to a fire event at a public building. Under the Playbook, pre-incident plans are necessary for an Interior Operations service level department to undertake interior attacks or primary search and rescue, in a building or structure that is larger or more complex than an ordinary residential building. Finally, it enables the Department to undertake pro-active fire prevention education activities within the community. As such, BIM, in discussion with Department members and officers, should craft an approach that sees this role fulfilled by the Department. Given the volunteer nature of the Department, this should be treated as compensable activity for the participating officers and members, which can be funded (at least in part) through the charging of a fee for the service.

**Fire Investigations**

While an argument can be made that LAFCs (and not local government _per se_) are currently responsible for fire investigations and reporting, the new _Fire Safety Act_ makes it clear that the obligation will now fall directly on the “local authority” (which includes a municipality). The requirements relating to fire investigations are set out in Part 7 of the _Fire Safety Act_ (ss. 22 – 27). As with fire inspectors, a local authority:46

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

Following a transition period, fire investigators must meet the training standards which are to be specified by the Fire Commissioner.47 Those standards have not yet been promulgated. These

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46 _Fire Safety Act_, s. 23(1).

47 _Fire Safety Act_ s. 23(2); the transition period is provided for in s. 53.
new training requirements will likely impact the Department’s officers, who most likely are the ones who will be expected to undertake the investigations.

Under section 25, each local authority is required to commence a fire investigation within five days of learning of a fire that has destroyed or damaged property, or resulted in death or injury. The investigation must examine the “cause, origin and circumstances” of the fire. The facts ascertained about the cause, origins and circumstances of the fire must then be submitted to the OFC within 30 days after such fire.48

Fire investigators are granted broad powers of entry onto property or premises for the purposes of conducting a fire investigation, and to remove a record or thing, conduct testing, take samples and make such records, as required.49

Powers and Authority

Under the Fire Services Act, powers and authority were granted principally through the mechanism of appointing fire chiefs (and others) as LAFCs.50 The role of Local Assistant, however, is being abolished.51 In place of the powers granted to Local Assistants, the new statute:

- grants a fire chief (or designate) the power to order a tactical evacuation where he or she “believes that there is an immediate threat to life due to a fire or explosion”;52 and
- deems “fire chiefs,” fire investigators and fire inspectors to be peace officers for the purposes of the new act.

In addition, as noted above, broad powers are granted to fire investigators conducting investigations, and to fire inspectors conducting inspections. Additionally, local authorities are granted the power to order a “preventive evacuation” where the local authority “believes that conditions exist on or in the premises that fire on or in the premises would endanger life.”53 Each of these new powers should be contemplated in any updated bylaw.

Updating Bylaw No. 41

BIM and the Department have attempted to update Bylaw No. 41 several times in the past. It is essential that this update process proceed – though, as noted above, there may be some utility

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

49 Fire Safety Act, s. 27.

50 Fire Services Act, s. 6.

51 Under s. 55 of the Fire Safety Act, Local Assistants are required to return their badges within three months of the new statute coming into force.

52 Fire Safety Act, s. 13.

53 On fire inspectors’ powers, see ss. 10 and 11; on fire investigators’ powers, see s. 26. The power of a “local authority” to order a preventive evacuation is set out in s. 14 of the Fire Safety Act.
in crafting a bylaw which is consistent with the new *Fire Safety Act* and holding off adoption until that statute is brought into force. Any gaps which exist could be covered either by adopting a policy or giving direction to the Department for the interim period under Council’s authority in the existing bylaw.

When developing the new bylaw, we recommend that the input of both officers and members of the Department be actively sought and considered.

**Suggested Establishment and Operational Bylaw Content**

This section sets out, at a high level, the types of issues that need to be covered by the updated bylaw, from the perspective of the Department’s operational and administrative structures, reporting lines, responsibilities and powers.\(^5^4\) Fire prevention matters that the Department and BIM may consider relevant or important, are not addressed, as these issues tend to be jurisdiction specific. From an organizational perspective, we would suggest that these fire prevention matters (e.g., outdoor burning, combustible liquid storage, chimney / ash control, etc.) are better set out in a separate bylaw that the Department and BIM bylaw enforcement officer are authorized to enforce.

A comprehensive operational and establishment bylaw should include the following:

**Department Establishment, Service Level and Jurisdiction**

1. A provision that continues the Department and sets out its official name.
2. A process for establishing and modifying the level of service declared under the Playbook. We recommend that the bylaw set out the process and that the service level be set (or amended) by Council policy.

Given that the Department is volunteer-based, BIM may want specifically to note that the Department’s ability to respond is dependent on the turn-out of volunteers. For any given incident, the response may be adversely affected by a low or slow turn-out. Some jurisdictions have taken to expressly stating that no warranty or assurance is provided as to the “certainty of timely response levels”.\(^5^5\)

As the Department may not always be in a position to provide an authorized service, the bylaw should stipulate that it may restrict the services it is providing based on available personnel, training and equipment until the situation is remedied. Moreover, in relation to a particular incident, the Department should be authorized to limit its response based on the availability of sufficient trained personnel, equipment and apparatus to deal with the incident in question.

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\(^{5^4}\) This list is drawn from work conducted for previous clients as well as a summary we prepared for use by the Local Government Management Association in its presentations to local governments.

\(^{5^5}\) See: *Greater Vancouver Regional District, Sasamat Volunteer Fire Department Administration and Regulation Bylaw No. 1204, 2014*, in particular section 1.5.
3. The bylaw should specify the ordinary jurisdiction limits of the Department (i.e., the boundaries of BIM) and the conditions or requirements that must be met before the Department’s resources operate in a different jurisdiction.\textsuperscript{56} We recommend elsewhere in this report that BIM explore the possibility of entering into external aid agreements, particularly for specialized services. The new bylaw also should specify the powers and authority of any department responding to such a request for assistance – either as specified in the aid agreement, or if the agreement is silent, then granting the assisting department the same powers and authorities as the Department.

Administrative Matters and Oversight

4. The bylaw should set out the fundamental administrative structure under which the Department operates, and through which oversight is provided, including:

- how the Fire Chief, Officers and Members will be appointed or hired. As with the Playbook service level, we recommend that the structure be outlined in the bylaw, with the process defined by or subject to Council policy, BIM human resources policies and/or Department operational guidelines;

- reporting lines;

- the Fire Chief’s authority and responsibilities. These responsibilities typically encompass the following:
  - general oversight and control of the Department, including its apparatus and equipment, and responsibility for strategic and long-term planning;
  - any specific reporting obligations to the Chief Administrative Office (the “CAO”) and/or Council;
  - budgeting and financial management related to the Department;
  - establishing and operating a training program that reflects the Department’s declared service level and service commitments, and that complies with the Playbook, \textit{Workers Compensation Act} (B.C.) (“WCA”) and regulations, and any other applicable legislation or standards;
  - developing and maintaining a statutorily-compliant fire inspection system;
  - conducting fire cause investigations and reporting on same to the OFC;

\textsuperscript{56} For most local governments, the issue of extra-jurisdictional responses requires detailed consideration. As BIM is an island the issues are more straightforward – though consideration should still be given to situations where assistance is obtained from an off-island department to respond to a major situation or unusual hazard (e.g., a hazmat incident).
operating an occupational health and safety ("OH&S") program and joint committee system in accordance with the WCA and consistent with BIM's program;

- maintaining a comprehensive set of operational guidelines in accordance with WCA and Playbook requirements, as well as best practices (including an effective on-scene personnel accountability system);

- maintaining appropriate records of required training, personnel issues, OH&S matters, apparatus and equipment maintenance, and other matters as required;

- developing and maintaining pre-incident plans and identifying major risks within the fire service area including, where relevant, any which the Department is restricted from entering due to a lack of pre-planning or because of the nature of the risks posed; and

- such other duties, reporting obligations or functions as may be considered necessary or appropriate by the CAO or Council; and

  - the process and authority for setting the compensation of the fire chief, officers and members.

**Department Services**

5. The services which the Department is authorized to provide should be stipulated in the bylaw. A process for amending or changing the services also should be defined (e.g., "such other services as may be approved by the CAO, subject to any necessary budget or other authorizations from Council").

The description of the authorized services can be general or specific. The advantage to having a specific list of services is that it helps clarify the range of responsibilities that face the Department, and which will impact its training and equipment requirements (and, therefore, budget). A list of services often includes:

- fire suppression (subject to the chosen level of service);

- wildfire and interface fire suppression;

- marine firefighting;

- fire prevention, pre-fire planning and public education;

- emergency health services subject to any agreement with the Emergency Health Services Commission;

- vehicle extrication/road rescue services;
• technical rescue services – the types of technical rescue authorized should be specified;

• hazardous materials responses;

• water rescue and/or swift water rescue;

• fire inspections under Fire Services Act or Fire Safety Act (as appropriate);

• fire-cause investigations; and

• such other life and health safety responses as may be authorized by the AHJ.

The Department also has some other responsibilities that need to be considered. Under the Fire Code, certain types of commercial and multi-family buildings are required to prepare fire safety plans. These plans must be submitted to the Department for review. It is common to charge a fee for plan review, and many jurisdictions now use fire safety plans as the basic template for developing their pre-incident plans (and, to that end, build into their bylaw the right to require an owner or occupier to submit the fire safety plan in a specified format).

Operational Powers and Authority of the Department

6. The Department also needs to be granted the powers necessary to operate at and control emergency scenes. Local governments have a broad range of general authority to regulate matters within their own jurisdictions. There also are specific powers which may be granted to fire chiefs (or other designates) under the Community Charter (B.C.) (the “Community Charter”),57 the Fire Services Act and/or the Fire Safety Act.

The grant of powers needs to be sufficiently broad so as to enable the Department to deliver its emergency response services effectively. The types of powers which should be contemplated include the following:

• the power to enter onto property to combat or address an incident, or in circumstances where they reasonably believe an incident has occurred or may occur. This power of entry should include any properties over or through which the Department needs to traverse to get to the incident, or on which the Department needs to station itself to carry out its response activities;

• the power to demolish, tear down or remove structures or things to combat or mitigate the incident;

57 See: Community Charter, s. 66. Powers granted under s. 66 must be given by bylaw.
• depending on the statute being relied upon, either the right to exercise the powers of the Fire Commissioner under section 25 of the Fire Services Act or the powers and authority contemplated by the Fire Safety Act (as discussed above);

• the right to establish boundaries around an incident and prevent people from entering the area so prescribed;

• the power to commandeering privately owned equipment and apparatus;

• the power to order the rectification of fire hazards and other risks;

• the power to administer and enforce relevant bylaws of BIM (e.g., those relating to matters such as fire prevention, fireworks, open burning, etc., and for matters arising under the establishment bylaw).

Ideally, the power to enforce such bylaws should include the ability to write tickets under the municipal ticket information system. This system permits municipalities to use a ticketing system for enforcing their bylaws. The maximum fine under such an approach is $1,000.

Many bylaws also include some general language that authorizes a department to take such other actions as may be required to combat or mitigate an incident.

Most bylaws then also create a series of offences, similar to Bylaw No. 41. This list typically includes:

• obstructing the Department and its members in the conduct of their duties or failing to follow their directions in relation to the management of an incident;

• blocking hydrants or water sources used by the Department;

• driving across fire hoses without permission or damaging Department property or equipment;

• impersonating a member of the Department; and

• refusing to permit the Department to enter into or upon property in relation to which an alarm or other request for assistance has been received, or in which the Department has reasonable grounds to believe that an incident has occurred or may occur.

Bylaw No. 12

As noted above, the Letters Patent required BIM to create a specific fire service reserve fund for monies brought over from the improvement district. On 8 May 2000, the BIM Council adopted Bowen Island Municipality “Fire Protection” Reserve Fund Bylaw No. 12, 2000 (“Bylaw No. 12”). Under Bylaw No. 12:

58 Letters Patent, s. 25.3.
• the monies held by the improvement district in its reserve funds were transferred to this account;

• monies could be added to this reserve fund from either the current year’s revenue or any general operating surplus; and

• the monies held in this account can be “expended solely for fire protection purposes.”

The stipulations on use are very broadly cast and would permit BIM and the Department to use the funds for a wide range of expenditures for the Department. BIM has a policy, however, that requires funds in statutory reserve accounts to be used for purchases of a capital nature. The addition and expenditure of monies into and through this account are examined in greater detail in the Budget section of this report.

External Aid Arrangements

Most fire departments in the province have established formal mutual or automatic aid arrangements with their neighbours. Few fire departments, even in the larger urban communities, can manage every potential event without obtaining aid from a neighbour. Mutual and automatic aid agreements enable fire departments to provide assistance to one another, when circumstances warrant. They permit 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 department’s resources are overwhelmed by events. These arrangements are necessary to ensure that there is both standing authorization to respond and legal authority to act at an incident in a neighbouring local government’s jurisdiction.

As an island community, ordinary mutual aid arrangements are not an option for BIM, since the delay would make most responses moot. Additionally, there would be no mutuality in the arrangement, since it is unlikely the Department would ever be called on to help a neighbour. Even so, it is necessary for BIM to plan for worst case scenarios. In a major interface event, the B.C. Wildfire Service will provide assistance, if it has the resources available. In other cases, there would be significant delays before any other fire service could provide aid – for example, in response to a major hazmat event or similar incident. Absent an agreement, special authorization must be sought by the assisting department – typically from its mayor and/or council.

As such, we would recommend that BIM explore options with the Metro Vancouver municipalities and fire departments, to determine whether it could be added to the existing area-wide mutual aid agreement (the “1995 Agreement”), or whether bilateral or trilateral assistance agreements could be established with neighbouring jurisdictions which could provide aid in the event of a major incident that the Department cannot manage on its own. The 1995 Agreement

59 Mutual Aid Agreement for Emergencies, 13 Oct. 1995. There are 19 remaining parties to the agreement, ranging from Lion’s Bay to Langley.
permits a responding party to bill for any services provided: BIM should expect that any arrangements that it makes in this regard will come with a cost.

Consideration also should be given to exploring with the City of Vancouver, whether BIM could gain access to a fireboat response in a major marine emergency. Based on the discussions held by the City of Port Moody in 2015, the costs are material, but the service is significantly more expensive to replicate locally and extremely expensive to use for “non-subscribers.”

Recommendations

Recommendation: BIM needs to develop and implement a fire inspection program in accordance with the requirements of the Fire Services Act. We recommend that, for an interim period while the Department is dealing with the training and other operational and administrative matters identified in this report, the Municipality retain the services of a third party to conduct such inspections. We would recommend that, as this third-party conducts inspections, it works with the Department to:

(a) undertake risk analyses to inform the future inspection program under the Fire Safety Act; and
(b) review and update the Department’s existing body of pre-incident plans.

Recommendation: If BIM intends to charge a cost-recovery fee for conducting fire inspections under the Fire Services Act, it will need to make provision for such fees by bylaw.

Recommendation: BIM, in consultation with the Department and its members, needs to develop an updated fire services operational and fire prevention bylaw. We have identified in this report some of the principal operational and administrative issues that need to be addressed, including powers, authority, reporting lines, and responsibilities. BIM will need to take a view as to whether to develop such bylaw under the existing Fire Services Act or develop one that anticipates the new Fire Safety Act – and hold off passage of the updated bylaw until that new act comes into force.

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60 In 2015, the cost was $40,000 annually for the City of Port Moody, which included up to four responses annually, to a maximum of four hours per response. Additional responses were $6,000 each, and the charge-out rate for calls over four hours was $1500 per hour. A non-subscriber rate also exists: the cost is $60,000 per four-hour call out and $6,000 per hour for calls lasting longer than four hours. City of Port Moody, Council Agenda 10 February 2015, at p. 116, available at: https://calendar.portmoody.ca/meetings/Detail/2015-02-10-1200-Regular-Council-Meeting/c451501c-5605-45de-b8b7-aa6300e42bae
**Recommendation:** BIM and the Department should explore the possibilities of formalizing arrangements with other Metro Vancouver municipalities and fire departments relating to the provision of aid in the event of a major emergency on the Island.
Organizational Structure and Staffing

At the time of this Review, the Department had approximately 30 members organized as follows:

- 1 Fire Chief – vacant at the time of the review
- 1 Deputy Fire Chief (currently in the role of Acting Fire Chief)
- 1 Training Officer/Assistant Chief (the “Training Officer”)
- 2 Safety Officer
- 5 Captains
- 20 Firefighters.

Under the system in place up to the end of 2019, the Fire Chief’s role was full time, while the Deputy Fire Chief was a 0.4 full-time equivalent (“FTE”) position and the Training Officer was a 0.2 FTE. The Deputy Fire Chief has moved up to be the acting Fire Chief role on a full-time basis. An interim Deputy Fire Chief has been appointed, with a slight bump to a 0.5 FTE role, given the nature and breadth of administrative and operational issues currently being addressed.

The current roster includes a total of 30 members, but the Acting Fire Chief has advised that 27 are actively involved in practices and responses. At the time of writing, the Training Officer position also was vacant (discussed further, below).

The Department’s organizational structure is shown in the chart, below:
BIM’s “Fire Department Volunteer Policy # 18-001” (2018), sets out expectations for attendance at training practices and responses to incidents. The expectation is that members will attend a minimum of 66% of all training practices and 25% of all call outs. Members not meeting these expectations are subject to a status review by the Fire Chief.

The Department maintains records for attendance at training practices and call outs. A review of the 2018 and 2019 attendance reports indicate that approximately half of the members are meeting the attendance obligations for both practices and call outs. This issue raises concerns related to the Department’s ability to meet its training obligations and emergency response objectives. Further, the unavailability of mutual aid and the need to staff the second fire hall support the case for an increase in the number of fire fighters in the Department.

It should be noted that, in relation to staffing of each Hall, the Fire Underwriters require:

- a minimum of 15 members plus an officer, regularly responding out of the main firehall; and
- a minimum of 10 members plus an officer regularly responding out of any satellite halls.

**Recommendation:** The Fire Chief should review the attendance records with all members and then engage all members to co-develop a strategy to increase the overall attendance for practices and response.

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**Recommendation:** The current number of fire personnel should be increased to improve effective response coverage deployment from two firehalls and to manage large scale emergencies as there is no mutual aid readily available to support the BIFD if needed.

**Roles and Responsibilities**

The stated roles and responsibilities for each of the officer’s positions is as follows: 62

*Table 2: Officers – Roles and Responsibilities*

<table>
<thead>
<tr>
<th>Role</th>
<th>Responsibilities/Job Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Chief:</td>
<td>Administers, plans, directs and controls all aspects of the Fire Department including administration, fire suppression, fire prevention and rescue activities. In addition, the Fire Chief abides by and implements applicable local, provincial and federal regulations. The Fire Chief reports to the CAO, and is responsible for supervising the other officers and firefighters.</td>
</tr>
<tr>
<td>Deputy Fire Chief (the “DFC”)</td>
<td>Provides administrative and technical support to the Fire Chief and liaises with the Fire Hall Facilities Steering Committee on the development of the New Fire Hall and Emergency Operations Centre. The DFC is responsible for responding to emergency calls and is required to be able to direct operations at fires and other emergencies. The DFC is responsible for the fire prevention program including the commercial fire inspection program. The DFC reports to the Fire Chief.</td>
</tr>
<tr>
<td>Training Officer</td>
<td>Working together with the Fire Chief and Deputy Fire Chief, the Training Officer is responsible for planning, developing, coordinating and implementing the services and activities of the Fire Department’s training programs. The Training Officer will also coordinate assigned activities with other divisions and outside agencies. The Training Officer is responsible for responding to emergency calls and must be able to direct all tactical operations at fires and other emergencies.</td>
</tr>
</tbody>
</table>

**Recommendation:** Consider increasing the Deputy Fire Chief and Training Officer FTE level to better manage administration and training responsibilities.

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62 Source: BIM Fire Department web page – [www.bowenislandmunicipality.ca/fire-department](http://www.bowenislandmunicipality.ca/fire-department) and individual job descriptions for each role, as provided by BIM. The Fire Chief’s job description was updated in 2019; the two other senior officer roles have not been updated since 2007.
**Recommendation:** The Department should increase the number of volunteer firefighter positions ensure adequate resources are available for responses to multiple or large incidents.

**Training and Training Levels**

The individual appointed as the Training Officer recently stepped back from his role. As such, the Fire Chief is primarily responsible for the Department’s training programs and training schedule, although other officers and individual members also contribute by providing some basic training to the members on subjects with which they have some expertise. The Fire Chief is working to confirm a replacement Training Officer.

The Department, as noted elsewhere in this report, has struggled with its administrative responsibilities. This is not unusual for volunteer departments. One area that has been impacted is the maintenance of comprehensive, individualized training records for each of the members and officers. The Fire Chief has advised that, while the records show a member’s attendance at weekly training, and the Department has some information relating to external courses taken by members (e.g., at the Justice Institute), taken together, these records do not fully identify each member’s and officer’s current level of qualification. As such, it is challenging for the Department to determine what future training is needed to maintain and further develop the necessary qualifications for its members and officers.

According to the Fire Chief, the Department’s training programs are mainly conducted in-house, with some external training obtained recently, and are intended to enable it to operate at the declared service level of Interior Operations.

As external reviewers, it was difficult for the Consultants to determine with certainty the level of training of individual members and officers. A number of members have extensive experience, but their qualifications are not fully or properly recorded. Based on our discussions with the Fire Chief, and review of available records:

- 9 of the Department’s 30 members (30%), qualified at the Exterior Operations service level as set out in the Playbook with a further 7 enrolled and partially completed;
- 5 of these 16 members (approximately 17% of the total membership) appear to have completed the NFPA 1001 requirements, which would meet the Playbook requirements for the Interior Operations service level; and

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63 The members are awaiting final documentation from the Justice Institute.

- Officers’ formal, recorded qualifications are lacking. Though many have extensive experience, the Department needs to undertake a process for confirming and recording their qualifications.

As noted below, however, the Department has significant work still to do to fully develop its training records and to confirm the level of qualification of each of its members and officers.

**Training and Qualification**

**Introduction and Context: Operational Risks**

The proper training of firefighters and officers is critical to the safe and effective delivery of emergency response services by the Department. In many respects, the risks faced by volunteer departments in the province are as great or greater than those of the career departments: volunteer members typically are less experienced, as they respond to fewer incidents; they are usually later to an incident than a career response, meaning a fire has progressed further, and is more difficult to manage; they usually have fewer firefighters at an incident; fire prevention and fire inspection activities are typically more limited; and they usually have fewer apparatus available to them during an incident. While volunteer departments, on the whole, respond to fewer structure fires than most of their larger career or composite urban counterparts, the risks they face at any given incident are probably greater overall as a result of the differences noted.

The nature of modern construction techniques has amplified the risks faced by firefighters. Lightweight construction components and contents made of composites, synthetics and other unusual fuels, cause fires to burn hotter, faster and with less predictability, creating a much more volatile fire environment than in the past. Although firefighters are now better equipped, fires today spread faster and pose a greater risk than those faced in the 1970s and 1980s. Having recognized this, the fire service in general is now placing a much greater emphasis on firefighter safety, with particular focus on interior operations, and seeking to reduce the degree of risk to which firefighters are exposed. Unless the situation presents firefighters with an immediate life safety issue (a savable life), in general firefighters should not be subjected to the high degree of risk involved in aggressive interior operations to save a single structure or its contents. With a good understanding of the appropriate fire ground strategies and tactics, combined with the necessary training, structure fires can usually be suppressed safely and effectively using an exterior, defensive mode of operations that materially reduces risks to firefighters.

Aggressive interior operations, such as fire attacks and primary searches, require firefighters to enter an extremely hazardous environment. These types of operations expose firefighters to adverse fire events such as flashover, smoke explosion or backdraft, as well as to a variety of other hazards. As such, they pose the most significant risk to firefighters during fire suppression operations, and require that the Department, and its AHJ, be certain that members and officers are properly trained to manage those risks.
We also would note that the geography of the Island poses some unique challenges. Even assuming that turnout is quick, the narrow roads and, in many places, steep inclines, will materially delay the response. Response delays caused by travel time issues means that fires will be more advanced when crews arrive, and therefore more difficult and dangerous to fight. The topography also poses significant access challenges for many buildings and there are a number of areas on the Island that lack proper water supplies. These additional factors make good general training crucial, and careful pre-planning essential, to ensure that the Department can operate safely at structure fires that it is likely to encounter.

**Service Levels and Applicable Training Standards**

In 2014, the OFC issued a new training standard applicable to the training of fire services personnel in the province. This new standard, referred to as the Playbook, was issued pursuant to and approved by the Minister of Justice under paragraph 3(3)(b) of the *Fire Services Act*. The Playbook replaces the previous minister’s order on training and is binding on all “fire services personnel” in the province. The previous minister’s order, MO-368 (December 2002), has been rescinded. A second edition of the Playbook was released, with some material updates and clarifications, in May 2015. The Playbook is currently under active revision, and an updated version is likely to be released later this year.

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

- **Exterior Operations** – includes fire fighting activities restricted to the control and/or extinguishment of fire from an external position to the building or object; where a fire department does not undertake interior attack or rescue operations on a fire-involved structure or object, or operate in an environment that is “immediately dangerous to life and health”.

- **Interior Operations** – where a fire department, in appropriate circumstances, will enter a fire-involved structure or object to undertake fire suppression activities or conduct rescue operations. Interior operations by these departments are generally to be limited to smaller structures, single family dwellings and vehicles, except where specific hazard assessments and planning have been undertaken in respect of more complex risks.

- **Full-Service** – a full-service department is equipped, staffed and trained to provide a full spectrum of fire services by firefighters and fire officers who are trained to the

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65 As that term is defined in the *Fire Services Act* (B.C.). The Playbook is not binding on fire suppression operations undertaken by Wildfire Services under the *Wildfire Act* (B.C.).

66 The Playbook requirements for each level of service are shown in Appendix 2.
competencies outlined in the NFPA 1001 FF-II and relevant NFPA 1021 Fire Officer standards.

One of the critical requirements in the Playbook is that fire departments need to maintain individualized records of each member’s training and qualifications, which show compliance with the minimum and other applicable training standards.

Assessments and evaluations of Competencies can be carried out internally by the AHJ so long as the evaluation instruments follow the criteria of this Playbook (and other applicable NFPA Standards) and that detailed records of firefighter training and evaluation are maintained. […]

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

A new aspect introduced by the Playbook is an explicit requirement that the AHJ over a fire department expressly set the level of service that is expected to be provided by the department. The training, organization, staffing, equipment and apparatus required to support the chosen level of service will all be impacted by that determination.

The AHJ in relation to the Department is BIM’s municipal council (“Council”). In June 2016, based on a report from the Fire Chief at the time, Council set the Department’s service level as “Interior Operations.” It is worth noting that the report from the Fire Chief seemed to contemplate that additional training would be required for the Department to meet the newly declared level of service:

“Based on 15 department members upgrading to this level of training the costs would be $12,000 per year over the next three years, to be funded through the Fire Department current year budget.” (emphasis added)

We believe that the current service level declaration should be reviewed and potentially reconsidered. There are two options available:

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68 Playbook, pp. 4 and 6. Maintenance of proper training records also is required under the *Workers Compensation Act* and regulations.

69 BIM, Minutes of the Regular Meeting of Council, 13 June 2016, at p. 6. The resolution was approved based on the report from the Fire Chief dated 30 May 2016, “Minimum Training Standards (the Playbook)” (the “Chief’s Report”).

70 Chief’s Report, p. 1.
• Consider reducing the declared service level to “Exterior Operations” until the Department has largely completed the training up of its members and officers as recommended in this report and required by the Playbook and WCA; or

• Leave the stated service level at “Interior Operations” but develop a more comprehensive service level declaration that expressly limits the Department from undertaking interior operations until the Fire Chief confirms that there are sufficient trained members and officers to deliver the service consistently and safely at such level. We have attached, as Appendix 3, a form of service level declaration that BIM may consider using (with such modifications as may be appropriate) for this purpose.\textsuperscript{71}

When considering how to address the question of the declared service level, BIM, the Department and its members need to ensure that they have reviewed and considered the training issues identified below.

The Playbook is not yet a complete system: it does not cover all emergency scene functions and responsibilities. One challenge, therefore, is the question of what standards apply to matters not covered by the Playbook itself. Although there are several indications in the Playbook that the NFPA standards are expected to apply to other functions (which was what was required by the previous Minister’s Order on training),\textsuperscript{72} ambiguity now exists as to the standards applicable for a wide range of firefighter training.

Given the requirements of the WCA, which imposes a positive obligation on employers to train workers appropriately, and given that the only recognized standards that exist in North America for the training of fire services personnel are those established by the NFPA, the better approach is to assume that those standards are applicable to the Department’s operations. Should a local government choose to adopt a different standard (or no standard at all) in relation to the training applicable to other fire service functions, if an incident occurs which relates back to training issues (as happened in the Clearwater case\textsuperscript{73}), that local government will be faced with the unenviable task of justifying the approach that it has taken in circumstances where, \textit{prima facie}, there is evidence of a problem.

As such, when formally implementing the service level standard for the Department, it is recommended that BIM also require that NFPA standards form the basis of all training for the operational functions undertaken and emergency services provided by the Department. That language is included in the draft form of service level declaration attached at Appendix 3.

\textsuperscript{71} This is a modified version of a form that we developed for use by the Fire Chiefs’ Association of BC.

\textsuperscript{72} The second edition did not entirely clarify the matter, though it even more clearly suggests that the appropriate standards applicable to matters not yet covered, are those set by the NFPA.

\textsuperscript{73} The death of firefighter Chad Schapansky in Clearwater, BC in 2004 which resulted in a Coroner’s report “Judgement of Inquiry into the Death of Chad Jerry Schapansky”. This report found that the Clearwater fire department lacked written operational guidelines governing interior attacks; it could also produce no training records for accredited training done by the interior attack team, rapid intervention team or fire officers in charge.
Based on the Department’s current or understood service mandate, the following is an outline of the standards applicable, in whole or in part, to the Department’s operations:

- The Playbook – Interior Operations Level;
- WCA and the OH&S Regulation (in particular, Part 31);
- NFPA 1001 – Firefighter Level I & II;
- NFPA 1021 – Fire Officer Level I, II or III (as per Department’s job requirements);
- NFPA 1041 – *Standard for Fire and Emergency Services Instructor Professional Qualifications* (2019 edition) - Fire Service Instructor I or II (as per Department's job requirements);
- NFPA 1561 - *Standard on Emergency services Incident Management System and Command Safety* (2020 edition); and
- Emergency Medical Services (EMS) – FMR Level III;

For specialty teams and other hazard responses that may be required, the following standards and training levels are suggested (subject to a review of the Department’s service mandate – on which, see below):

  - High-Angle Rope Rescue – operations or technician level,
  - Confined Space Rescue – operations or technician level,
  - Trench Rescue – operations or technician level,
  - Vehicle Rescue/Auto Extrication – operations or technician level,
- Wildland/Urban Interface – S100, S215, along with Wildland for Structural Firefighters
Department Training Processes

As noted above, the Department is still working to officially fill the position of Training Officer, and, in the interim, the Fire Chief is primarily responsible for managing the training program and ensuring its delivery. Confirming this appointment is a short-term priority, as the leadership team of the Department will need significant assistance in managing the administrative and other responsibilities that they face. We would note that the Deputy Chief has stepped up to the Fire Chief role during a time of great need for both the Department and community at large. He is dedicated to ensuring the Department can deliver emergency response services to Island residents and has worked with us develop this report. The Fire Chief has already begun significant work to address various of the matters identified.

Under the Department’s OG #301, various responsibilities for managing training processes within the Department are allocated among the Fire Chief, Deputy Fire Chief and Training Officer. OG #301 is badly out of date: it references training standards that pre-date the 2002 Minister’s Order on Training (which itself has been superseded by the Playbook). The Department should review and update OG #301 and determine whether the allocation of roles remains appropriate.

The Department conducts about 40 regular evening training practices annually but does not currently have a long-term training plan (e.g., a quarterly or annual plan) in place. As it addresses the issues identified in this report, and works to upgrade or confirm members’ qualifications, it will be in a better position to develop and implement such a program. We note that its OGs and OH&S program identify several training programs, including “Recruit Firefighter,” “Probationary Firefighter,” “Training Officer,” “Company Officer,” and “Command Officer.” Our discussions with the Fire Chief, however, indicate that these programs do not actually exist. These programs will need to be developed to enable the Department to meet its long-term recruiting and training requirements. As an aspect of that program creation, the BIFD also will need to develop a series of job descriptions, responsibilities and prerequisite qualifications for all positions. This type of structure will help the Department plan future training initiatives and provide a path for members who wish to progress up to the officer ranks (and thereby assist with succession planning).

One of the challenges the Department faces is that few of its members hold the formal qualifications required for conducting the necessary training in-house. The Playbook establishes certain general requirements in this regard: the second edition clarified that no third-party certification is required for in-house trainers. Rather, all trainers/instructors must be “qualified” in the subjects or areas that they are teaching,74 and the Department needs to keep appropriate records of both the training and evaluation processes.

During discussions with the Fire Chief and other members of the Department, however, it was apparent that the Department lacks sufficient “qualified” in-house instructors to provide the

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74 The qualifications of a member responsible for in-house training need to be supported by appropriate records.
required training to enable its members to achieve and maintain the Interior Operations service level competencies. As such, the Fire Chief is not comfortable with attempting to meet the Department’s training needs utilizing only in-house instructors but would prefer to seek external assistance for the foreseeable future to ensure this process will be successfully completed in a timely manner. This approach will involve contracting outside assistance in the early stages to help get the current members to the required levels of competency as identified in the Playbook. It will also assist the Department in developing a team of qualified in-house instructors who would be capable of continuing and maintaining this process into the future.

As training qualifications are confirmed or obtained, it may be useful to identify individual members within the Department who would be willing to become trainers for particular subject areas. They can then be qualified to act as trainers through a properly recorded in-house process, and share some of the responsibility for the training of other members.

When it was introduced, the Playbook recognized that many volunteer and composite departments may lack the individualized and detailed training records that it (and WorkSafe BC) requires. As such, the Playbook makes express provision for “prior learning assessments” (“PLAs”). In that regard, the Playbook notes:75

In terms of Prior Learning Assessment[s] for firefighters who may have previous training, at whatever level, the onus is on the AHJ and the department to put in place appropriate processes to determine whether the prior experience and training of a firefighter meet the training Competencies needed for the department’s Service Level.

This assessment may be performed internally by a department or be undertaken by an external third-party assessor. An assessor must, as a minimum, already have the Competencies in respect of which the assessment is being performed.

The assessment may take into account the experience, prior training and any Accredited Certification or other Certification, of an individual firefighter or officer. The assessment must be formally documented, including identifying the factors upon which equivalency to the relevant Competencies was determined.

For Department members and officers who are experienced, but for whom records are insufficient to identify their qualifications, a PLA may provide the most efficient way for the Department formally to confirm training qualifications. Given that the Department lacks qualified instructors, undertaking PLAs would require the hiring of qualified external examiners. Properly documented PLAs will bridge the existing gaps in the Department’s training records for members who are qualified through that process.

75 Playbook, s. 4, “Bridging and Prior Learning Assessment”, at p. 12.
Review of Current Training Levels

The Department’s required training levels are determined, at first instance, by its declared service level and overall service mandate. Currently the Department provides the following services at the following levels:

- **Fire Suppression** – currently declared at the Interior Operations Service Level. Approximately 16 members (of 30) qualified at the Exterior Operations level, with five of those members qualified at the Interior Operations level; awaiting certificates from the Justice Institute to confirm these qualifications for each of the two levels.

- **Emergency Medical Services (EMS)** – 10 members to First Medical Responder Level III and three to Emergency Medical Responder level.

- **Vehicle Extrication** – to the operations level through an in-house training program; no documentation to confirm competencies.

- **Emergency Vehicle Driver and Operator (EVD/EVO)** – several members trained through an external program; no documentation to confirm competencies.

- **Hazardous Materials Response** – to the awareness Level; no documentation to confirm competencies.

- **Technical Rescue Disciplines**, such as High Angle Rescue, Low Angle Rope, Confined Space, Water Rescue, etc. – the Department will attempt these services but no formal training or documentation.

- **Marine Fire Fighting** – will attempt but no formal training or documentation.

- **Wildland/Urban Interface** – some members have the S100 training, while others have the S215; no documentation to confirm competencies.

The Consultants did not witness actual operational training of Department members, and the following observations and comments are therefore based on the various discussions held with the Fire Chief, Captains and firefighters, as well as the review of available records, as an indicator of the level of operational readiness of the Department to carry out its mandated emergency response activities.

The Playbook sets out the minimum competencies for firefighters at the Interior Operations service level, and provides that the “maintenance training for such Competencies is the responsibility of the AHJ and it is expected that this will be accomplished through ongoing skills maintenance training and education.”\(^{76}\) This ongoing training must be duly recorded for each firefighter and officer.

\(^{76}\) Playbook, section 7 – "Maintenance Training", p. 7.
Although there has been a recognition in the Department of the need for improved training following the introduction of the Playbook, developing the necessary processes within the organization has proven challenging. The Department has been trying to change this situation with the introduction of some external training programs, principally through the Justice Institute, to achieve the Exterior Operations service level qualifications. As noted above, there are now a number of members who appear to have obtained the Exterior Operations service level qualifications, and the Department is beginning to focus more attention on the requirements of the Interior Operations service level firefighter.

The Department indicated that it strives to meet the proficiency requirements of the applicable NFPA standards for most operational skills, where possible, through in-house delivery of the initial training/skills, as well as the maintenance of those competencies and skills through the subsequent continued on-duty training processes. It is difficult however, due to the lack of comprehensive training records, to confirm that these processes have actually occurred, that the trainers themselves were qualified, and that the required initial training and subsequent maintenance training have taken place.

For the Department to determine its current level of training for each member, and to advance members’ qualifications to the Interior Operations service level, will involve members making a significant commitment to training over the next 18 to 24 months. One approach might be to use occasional weekend training sessions, on one or both days, to be able to catch up on the required training or qualification testing, to meet the competencies of the Interior Operations level firefighter. This approach will require members to invest an increased amount of personal time to the Department to accomplish this goal. We note that, based on our discussions with the firefighters, a number already felt stretched between their commitments at home and their regular jobs, and would be challenged to make additional time available for further training. We discuss elsewhere in this Review the need to develop a more flexible approach to compensation of members. Some departments (notably, Sechelt’s) use a “pay-for-training” system – where members are only paid for attending training, and not for call-outs. This system includes set amounts for attending weekend training sessions.

The need to incentivize members to attend additional training requires detailed consideration and consultation with the Department members as well as BIM staff and elected officials. It will also have an impact on the Department’s training budget.

From the documentation provided, it appears that 12 members have had some form of Emergency Vehicle Operation or Emergency Vehicle Driver training, delivered by an outside provider. Firefighters who have not had this training should be limited as to how and when they can drive or operate any of the Department’s fire apparatus.

The issue of appropriate training levels also needs to be considered along with the obligation to ensure that workers are properly supervised while performing their duties. As an Interior Operations department, BIFD is required to train its officers, and any members responsible for supervisory activities at an incident, to the Team Leader qualifications as identified in the Playbook. These Team Leader requirements are primarily drawn from the “Emergency Service
Delivery” requirements of NFPA 1021 Fire Officer I (“FO-I”). Although the Playbook is currently silent on incident command and emergency incident management, the Department must ensure that its incident commanders (“ICs”) are properly trained and able to direct operations in a challenging environment. They need to be trained in the BC Emergency Management System Incident Command System (“ICS”) and the Department also needs to draw on relevant portions of NFPA 1561. The importance of the role of the IC cannot be over emphasized. At an incident, the IC is responsible for:

- formally establishing command;
- conducting a comprehensive size-up, including hazard awareness and a risk analysis;
- determining what constitutes a reasonable level of risk for members to undertake based on the generally accepted fire service risk management model;
- determining an appropriate incident action plan, given the resources available and their capability at that time to address the risks they are confronted with;
- properly implementing that plan given the resources available;
- addressing required emergency scene communications and personnel accountability needs;
- ensuring the safety of all personnel at an incident; and
- managing the overall command, control and coordination of all resources and activities.

As such, any Department personnel who may be put in the role of the IC must have a thorough understanding of the ICS and its application. Proper training in emergency incident management will enable the Department to get the most effective and safest performance out of the on-scene crew.

Where its firefighters make entry into a burning structure, the Department is required to establish a two-person rapid intervention team (“RIT”) within 10 minutes of initial entry, or prior to the entry of a second team. It should be noted that the Playbook competencies for RIT members fall within the requirements for the Interior Operations firefighter. All members who will be trained to this level also should receive RIT training. RIT qualifications and requirements are found in NFPA 1001, s. 5.3.9, NFPA 1407 and NFPA 1500.

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77 NFPA 1561, Standard on Emergency Services Incident Management System and Command Safety, 2014 Edition as published by the NFPA.
78 Occupational Health and Safety Regulation, s. 31.23.
The Department's training documentation is insufficient to demonstrate that any members formally meet the requirements for Team Leader, or for Company Fire Officer, and it is not clear from the records as to how many meet the requirements for a RIT member.

Although the current version of the Playbook only requires a “Company Fire Officer” for departments operating at the Full-Service Operations level, we typically recommend that Interior Operations departments strive to provide their officers with as much of the Company Fire Officer training as possible, to ensure that they are able to control fire ground operations and manage interior attacks properly and safely. The training and qualifications required for this position are the full NFPA 1021 FO-I requirements. In addition to a thorough working knowledge of ICS-100 and ICS-200, at a minimum, this should include all the competencies required of the Interior Operations firefighter, as well as those of NFPA 1021 FO-I found in sections 4.2.1, 4.2.2, 4.2.3, 4.6.1 and 4.6.2, along with the ISO competencies of NFPA 1521, chapter 5.

Given the Department’s Interior Operations service level, aggressive offensive interior operations may be necessary, often requiring the need for several tactical Team Leaders in addition to that of the RIT and the IC. As a volunteer department, the BIFD is never certain which officers and/or members will respond to a given incident. As such, for the Department to operate at the Interior Operations service level it is important that all officers meet the requirements of Team Leader (or higher) and RIT to ensure appropriate supervision and leadership will be present at each incident.

A detailed breakdown of the Playbook training competency requirements necessary to achieve and maintain a declaration of Interior Operations service level can be found in Appendix 2.

The Department’s officer structure appears well organized with a Chief and Deputy Chief, a Training Officer, and five Captains positions in place. However, as noted above, the existing training documentation is insufficient to establish that any of the officers currently meets the Playbook requirements for the Interior Operations service level. This by no means suggests that these officers are not experienced or trained, but their qualifications do need to be confirmed and documented.

At an incident, best practice and the Department’s OH&S Program require that one member take the role of incident safety officer (“ISO”).

The Incident Commander at any incident will appoint an Incident Safety Officer in accordance with Department Operational Guidelines. The Incident Safety Officer will be responsible for monitoring the safety of operations at the incident.

It should be noted that, although the OH&S Program cross-references to the Department’s OGs, the OGs themselves do not expressly deal with the appointment of an ISO. Based on usual practice, where an ISO is not appointed, responsibility for scene safety rests solely with the IC –

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80 National Fire Protection Association, NFPA 1521: Standard for Fire Department Safety Officer Professional Qualifications (2020 edition) and BIFD OH&S Program, s. 7.03 (from which the quote is drawn).
as reflected in the Department’s OG 2.02, “Incident Command System”, which requires as follows:

“The IC will provide for the safety and welfare of all fire fighters on the fireground.”

The Department does not currently train or evaluate to the requirements of the NFPA 1521 standard. Although these competencies are not a requirement of the current edition of the Playbook, as noted above, the best practice is to apply NFPA standards to required emergency scene functions, even if the Playbook is silent on the issue.

Based on the Consultants’ review of current training and operational readiness, as set above, the Department should reconsider its approach to conducting interior attack and search operations. Given the lack of documentation to support the current training levels of the firefighters and fire officers (Exterior Operations, Interior Operations, and RIT), and lack of members qualified as Team Leaders (components of NFPA 1021 and RIT), and the absence of written operational guidelines covering aggressive offensive fire ground operations, the risks of undertaking aggressive interior operations are significantly increased. A line of duty death or serious injury is a risk that all fire departments must seek to mitigate.

In the event of a line of duty injury or death, the potential for liability is significant, a risk that is potentially increased by conducting offensive interior operations given the current uncertainties surrounding the Department’s training qualifications. As such interior operations should be formally restricted until the training and qualification issues are substantively resolved.

**Specialty Services**

The Department is the principal “all-hazards” response agency on the Island. As such, it gets emergency calls for a wide variety incident types, presenting it with challenging situations, where an off-island response is neither practical nor timely. These additional emergency response types are specialty service areas, with demanding training requirements. Absent proper training and, in some cases, equipment, the Department puts its members, and potentially the public, at risk when it attempts a rescue or incident response for which it is not qualified. For example, we would note that “confined space” rescues can be exceptionally dangerous. WorkSafe BC has stringent rules and requirements governing confined space entry situations. In 2003, New Westminster Fire and Rescue nearly lost a member attempting a confined space rescue on a barge undergoing repair – even though that department had training, equipment and procedures for dealing with such situations.81

There is no easy answer to this issue. We have recommended above that BIM explore the possibility of entering into aid arrangements with mainland neighbours to provide backstop

support, particularly for specialized hazards. However, if the Department is to be expected to continue to respond to such situations – and to attempt rescues when individuals are in immediate danger – then investment in specialized training and related equipment will be required. The general feedback we received from the Department regarding this type of training suggests that it has been sporadic, and that the competencies and skills that may have been achieved have not been well maintained since any initial training.

The Department, its members and BIM should review the extent of the Department’s service mandate to determine:

- whether the particular service needs to be provided by the Department;
- the required training and qualifications necessary to provide each such service;
- the operational guidelines required for each such service; and
- the level of funding required to provide each such service, including equipment, initial training and qualification, and on-going maintenance training and any required re-qualification.

From that review – which should take place in the larger context of developing an overall strategic vision for the Department (see the Strategic Planning section, below) – a program should be established to guide the training and equipping of Department members to enable them to respond safely and effectively to these other incident types.

**Records Keeping**

In Appendix 4, “Fire Department Records”, we have set out an overview of the records which fire departments generally must or should keep in order for meeting their statutory, regulatory and operational requirements. The Department should review those requirements and develop processes for keeping all of the required records. In relation to training records, it should be noted that the following criteria need to be met, to ensure that the Department can readily prove each firefighter’s and officer’s qualifications:

- the training must be delivered by a qualified instructor. The instructor’s qualifications to teach a particular subject or job performance requirement (“JPR”) under the Playbook or an NFPA standard, need to be provable (particularly where training is being delivered in-house);
- the subject matter of the training needs to be clearly described in the records. If the training relates to a particular JPR under the Playbook or an NFPA standard, that JPR should be identified; and
- each participant in the training needs to be evaluated, and his or her results duly recorded. Ideally, the evaluation process should be described as part of the training program or evident from the records kept.
The Department previously had used the “Firestation” record keeping program, but currently maintains its training records primarily in paper copy, which do not identify individual member’s qualifications. The Fire Chief indicated that the Department is now moving to the “Firehall.net” records management system which will permit it to maintain records as described above.

When setting up a training records system, it is important to be able to determine what training an individual still requires to meet his or her qualification requirements, as well as what skills need refresher training.

Training Facilities

The fire hall training ground provides very limited space to conduct routine basic training sessions and simple outdoor drills, and the site could definitely be larger to incorporate additional training props and enable more effective and in-depth training, particularly for multi-unit, scenario-based exercises. As such, the Department’s ability to train at the hall is limited, and so it occasionally uses other sites in the community. There is no formal training classroom to accommodate the number of members that generally attend weekly training. These issues will be addressed with the construction of the new main fire hall.

Formal live-fire training exercises are conducted off-island at the Sechelt training site using some in-house or Sechelt Fire Department instructors, or at the JIBC Maple Ridge training facility using their format/curriculum and instructors.

Training Recommendations

**Recommendation:** The Department should receive funding for an administrative support position. This may translate into two days per week once a steady-state has been achieved and all previous records have been checked and correctly entered into the system.

**Recommendation:** In the short term, the Department needs to appoint a Training Officer. The individual appointed to this role initially would be responsible for managing and designing weekly training, and helping the Fire Chief and Deputy Fire Chief to organize the external training and qualification reviews described below.

**Recommendation:** The Department needs to develop detailed job descriptions and corresponding training and qualification requirements for all positions, from recruit firefighter through to and including the various officers’ positions.

**Recommendation:** The Department’s operational guidelines need to be updated to ensure that they meet current statutory and regulatory requirements, and properly cover all aspects of incident scene activities for an Interior Operations service level department. The OGs also need to cover all additional specialty services provided by the Department.
Recommendation: The Department needs to implement an appropriate records management system to record and manage all training activities for each member of the Department. The Department will likely require some short-term assistance to set up such system, and to gather and input existing records into the RMS.

Recommendation: The Department should continue to work with the members to gather details of all externally-granted training certifications and qualifications (i.e., from third-party training entities).

Recommendation: The Department should conduct a gap analysis of existing recorded training qualifications for each member. In consultation with the members, it will need to identify the most effective means of confirming members' qualifications (i.e., through PLAs or additional training) where the existing records are insufficient. From that review, it should develop a plan for bridging the identified gaps, and obtain approval of same from BIM. It seems likely that external training providers will need to be retained to deliver the programs initially. However, as part of the training processes, the Department should undertake a “train-the-trainer” approach, and develop the necessary qualifications for its members to deliver most regular and maintenance training in-house.

Recommendation: As qualifications are confirmed or established through the external processes, the Department should establish a long-term training program to ensure that all members are trained and qualified to carry out their assigned duties. This includes developing a recruit, firefighter and fire officer program.

Recommendation: In consultation with the members, and with BIM staff and elected officials, the Department should review the current service level declaration. At present, the existing records indicate that the Department can only safely operate at the Exterior Operations service level. The service level declaration may remain at Interior Operations, provided that there is a temporary restriction on conducting interior operations until training and qualification levels are confirmed. Alternatively, the service level can be changed to Exterior Operations, and upgraded once training and qualification levels for Interior Operations are confirmed.

Recommendation: The members and officers of the Department, in consultation with staff and BIM elected officials, should review the breadth of the Department’s service mandate. Where specialty services – such as specialized fire suppression (e.g., marine), hazmat or various technical rescue services – are to be delivered by the Department, a plan will need to be developed that:

(a) identifies the specialty service and level to which it is to be provided;
(b) sets out the training and qualification requirements, and a plan for obtaining initial qualification and any maintenance training;  
(c) identifies any special equipment requirements; and  
(d) sets out the costs of providing each such service.
Occupational Health and Safety

Background

The statutory basis for occupational health and safety programs is found in the WCA and the Occupational Health and Safety Regulation, B.C. Reg. 296/97 (the “OH&S Regulations”), as well as in other regulations and the policies of WorkSafe BC. The requirements are complex and prescriptive. It has been our experience that many volunteer departments, although safety-conscious, struggle to manage the regulatory burden created by the WCA and the OH&S Regulations.

Under the existing structure, the Department members are considered employees of BIM for workers’ compensation purposes. As such, it is the responsibility of the Municipality to ensure that the various obligations under the WCA and OH&S Regulations are being met.

The WCA mandates that the relevant local government’s occupational health and safety program is supposed to apply to its fire departments. Most local governments, however, develop a standalone program for their fire departments, given the special circumstances and risks that they face.

Under section 31.3 of Part 31 of the OH&S Regulations, where an employer is required to maintain a joint committee, its fire department is required to operate a separate joint committee.

Existing Structure

BIM has an OH&S program and operates a joint committee for its employees. The Department also has an OH&S program, set out in OGs. The Department’s OGs call for the creation of a joint committee, but the Department is not currently operating such committee. The Department’s OG-based program is quite dated, and does not reflect (for example) the various regulatory changes introduced in 2017 dealing with the training of joint committee members and the obligation to conduct an annual review of that committee’s operations.

The Fire Chief sits on the existing BIM joint committee, but there does not appear to be any membership from amongst the Department members, other than individuals who are also full-time employees of the Municipality. It is not clear that Department members have selected any persons to represent them on the existing joint committee.

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82 The language in section 3.1(1.1) of Part 3 of the OH&S Regulations notes that the employer’s OH&S program must cover the “whole of the employer’s operations”.

83 The need for a separate joint committee (or worker representative) for fire departments is set out in s. 31.3 of Part 31 of the OH&S Regulations.
Outline of OH&S Requirements

The following section lays out the framework for ensuring that there is in place an appropriate OH&S program and related joint committee for the Department. It is worth observing that neither the WCA nor the OH&S Regulations lay out a straightforward discussion of either the formal requirements or content of an OH&S program for the fire service (or any occupation, for that matter). The statutory and regulatory structure is complex and prescriptive: any recommendations made here should be confirmed through BIM’s and Department's ordinary legal review processes.

Formal Requirements

The following section sets out a general overview of the requirements for an OH&S program.

The starting point for any consideration of OH&S is section 115 of part 3 of the WCA, which makes employers responsible, among other things, for:

- ensuring the “health and safety of all workers working for that employer”;
- providing the information, instruction, training and supervision necessary to ensure the health and safety of workers in carrying out their work;
- complying with the WCA and related regulations and orders, and
- establishing OH&S policies and programs in accordance with the OH&S Regulations.

Section 3.3(1) of Part 3 of the OH&S Regulations requires an employer to initiate and maintain an OH&S program when it has a workforce of 20 or more workers and a workplace that is determined to create a “moderate or high risk of injury,” or by every employer which has 50 or more employees. The “moderate or high risk of injury” should be assumed to apply to the Department’s operations. The OH&S program must apply to “the whole of the employer’s operations”. The program must be designed to prevent injuries and occupational diseases, and is required to include:

(a) a statement of the employer’s aims and the responsibilities of the employer, supervisors and workers;

(b) provision for the regular inspection of premises, equipment, work methods and work practices, at appropriate intervals, to ensure that prompt action is undertaken to correct any hazardous conditions found;

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84 Section 3.1(1.1) of Part 3 of the OH&S Regulations. Most local governments implement separate, compliant iterations of their OH&S programs for their fire departments.

85 Section 3.3 of Part 3 of the OH&S Regulations.
appropriate written instructions, available for reference by all workers, to supplement the OH&S Regulations;\(^{86}\)

provision for holding periodic management meetings for the purpose of reviewing health and safety activities and incident trends, and for the determination of necessary courses of action;

provision for the prompt investigation of incidents to determine the action necessary to prevent their recurrence;\(^{87}\)

provision for the maintenance of records and statistics, including reports of inspections and incident investigations, with provision for making this information available to the joint committee or worker health and safety representative, as applicable and, upon request, to an officer, the union representing the workers at the workplace or, if there is no union, the workers at the workplace; and

provision by the employer for the instruction and supervision of workers in the safe performance of their work.

**Joint Health and Safety Committee**

As part of an OH&S program, employers are required to establish joint committees (or appoint worker safety representatives) to review and manage safety issues in the workplace. Pursuant to section 31.3 of the Part 31 of the OH&S Regulations, in a situation where an employer is required to

“establish a joint committee or [appoint a] worker health and safety representative, then a fire department … operated by the employer **must have a separate joint committee or worker safety representative**, as applicable”. [emphasis added]

The Department has approximately 30 members, including three officers. It has two fire halls, and has recently moved to responding out of both halls. The second hall would be treated as separate workplace, a factor that needs to be taken into account when structuring the joint committee.

The provisions covering the establishment of joint committees are found in sections 125 – 129 and section 139 of the WCA. Section 125 requires that a separate committee be established for each workplace where 20 or more workers of the employer are regularly employed, while section 139 requires that a worker safety representative be appointed in each workplace where there are from 10 to 19 employees.

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\(^{86}\) This provision establishes the overarching requirement for formal operational guidelines and/or standard operating procedures for the Department’s primary activities, including emergency scene operations.

\(^{87}\) Section 3.4 of Part 3 of the OH&S Regulations stipulates the required contents of any incident investigation report that is required to be completed.
In relation to the establishment of a joint committee, the WCA sets out detailed and prescriptive requirements regarding (among other things):

**Section 127:** Membership on the joint committee and appointment of co-chairs from amongst the employer and employee representatives:

(a) it must have at least four members;

(b) it must consist of worker and employer representatives

(c) at least half the members must be worker representatives; and

(d) it must have two co-chairs – one selected by the worker representatives and one selected by the employer representative.

**Sections 128, 129:** The means of selecting the worker and employer representatives:

(a) if none of the workers are represented by a union, the worker representatives are to be elected by secret ballot (s. 128(b)).

(b) the employer representatives on a joint committee must be selected by the employer from among persons who exercise managerial functions for the employer and, to the extent possible, who do so at the workplace for which the joint committee is established (s. 129).

**Section 130:** This section sets out the duties and functions of a joint committee. We recommend that these be set out in the OH&S program, as listed in section 130 (amending the final item to read: “to carry out any other duties and functions prescribed by WorkSafe BC”).

**Section 131(2):** This section sets out a requirement for monthly meetings.

**Section 133:** This section requires an employer to respond to recommendations from the joint committee.

**Section 134:** This section deals with the payment of members for work on the committee. Under section 134, employers ordinarily must grant worker representatives time off from work and to pay them for that time. In volunteer and paid-on-call departments, we usually recommend that the employer develop a stipend for members serving on the joint committee (i.e., a set amount per year for regular participation on the committee), with a separate hourly rate if committee members are required to participate in an investigation of a workplace accident or similar event. This issue is addressed further, below.

**Section 135:** Under section 135, the employer must provide appropriate administrative support to the joint committee.

**Sections 137 – 138:** These sections set out certain administrative requirements:
(a) handling of records and distribution of reports (section 137)
(b) posting of names of joint committee members (s. 138 (a));
(c) the keeping and posting of minutes of the joint committee meetings (s. 138 (b)); and
(d) the posting of WorkSafe BC orders (s. 138 (c)).

Once established, the joint committee is primarily responsible for ensuring that the Department is meeting the requirements of the OH&S program (including, for example, regular checks of the premises, apparatus and equipment), and for investigating workplace incidents should they arise.

The rules pertaining to the operation of the joint committee/worker representative system were updated in 2016, with effect from 2017. Under BC Reg. 312/2016, which amended the OH&S Regulations with effect from 3 April 2017:

- there must be an annual, written evaluation conducted examining, among other things:
  - whether the joint committee membership requirements and selection processes met WCA requirements (ss. 3.26(3)(a)(i) - (iii));
  - whether the joint committee fulfilled each of its duties and functions and met as required by the WCA (ss. 3.26(3)(iv) and (v));
  - whether the joint committee operated as provided in the WCA, including with respect to training, administrative support and other specified matters (ss. 3.26(3)(vi) – (xii)); and
  - the effectiveness of the rules of procedure and overall effectiveness of the joint committee (ss. 3.26(4) & (5); and

- members of a joint committee must receive certain specified training, aggregating, in total 8 hours, and worker representatives must receive similar training aggregating 4 hours (ss. 3.27 (2) & (3)), covering the matters specified in ss. 3.27 (4) & (5), respectively.

The training obligations apply only to new members of a joint committee or new worker representatives, in each case, appointed after 3 April 2017. In certain circumstances, the training obligation is waived where a new appointee has already received the training in question (ss. 3.27 (6) & (7)). Certain records keeping obligations are attached to the new, explicit training requirements.88

The proper operation of a joint committee can be a time-consuming task. One of the issues frequently identified when working with volunteer and paid-on-call departments is a lack of

88 B.C. Reg. 312/2016, ss. 3.26(8) & (9).
interest or willingness on the part of the members to afford additional personal time to this administrative responsibility. To overcome this problem, BIM and the Department should consider the following:

- whether the individuals who participate on the committees be remunerated for the time they will be required to commit – perhaps with a separate monthly stipend, plus an hourly rate in the event that the joint committee has to undertake an accident investigation or similar enquiry;

- where training is required for committee members, the training pay otherwise paid to members for attendance at practices should be paid. If, as is the case for the Department, members are not currently paid for training, then a rate should be established for the purposes of fulfilling this critical administrative function; and

- where possible, the regular monthly meetings of the joint committee could be timed to occur at the end of the one of the regular practice nights. Most monthly committee meetings will not be long and committee members can be excused from any post-practice apparatus or equipment clean-up to attend the meeting.

Although the Department is now responding out of both of its fire halls, it is still possible to operate a single joint committee by making application to WorkSafe BC. We would recommend that this approach be adopted by BIM.

We have attached, at Appendix 5, a draft set of terms of reference that BIM and the Department can use to establish the Department’s joint committee, as well as a form of letter that could be considered for use when requesting permission from WorkSafe BC to operate a single joint committee for both fire halls.

Operational Issues and OH&S Matters

The Department is not currently keeping appropriate records for a wide range of matters. Various presumptive coverages now exist for firefighters under the WCA, including certain cancer types, heart disease and post traumatic stress disorders. It is essential, however, that the Department, both to protect itself and its members, keeps thorough records of each event and incident to which members respond, so that these types of claims can be fairly adjudicated. The maintenance of these types of records are contemplated in the Department’s OH&S program (see Part 13), and required by WorkSafe BC.

In addition, we would note that the Department should have express, updated procedures to address bullying and harassment, as required by WorkSafe BC. Alternatively, to the extent

89 See section 126(1)(b) of the WCA.

that BIM already has such policies in place, it should clarify that these policies also apply to the Department and its members.

Under the OH&S Regulations (and, in particular, Part 31), the Department has certain obligations to undertake maintenance, testing and repair of various equipment. Appendix 4 sets out, at a high level, the types of records that fire departments need to keep (including OH&S matters and training issues). OH&S requirements and best fire service practice, require the following:

**SCBA:** Under ss. 31.19 – 31.26, and 8.32-8.45 of the OH&S Regulation, the Department is required to undertake appropriate maintenance, repair and testing of SCBA and fit-testing of masks using qualified personnel. The Fire Chief indicated that SCBA units and related units were maintained by Profire and Irwin Air. Records provided by those external service providers were kept by the Department. The Fire Chief noted, however, that although fit testing is being done (albeit overdue this year as a result of the other issues the Department is grappling with), it was not clear that the Department had full records on this matter.

**PPE:** Proper maintenance and cleaning of PPE is required under Part 8 of the OH&S Regulations and ss. 31.10 – 16 of Part 31. PPE requirements are also addressed in NFPA 1851 and NFPA 1971. Although the Department has OGs dealing with the regular inspection and cleaning of PPE, the Department is not regularly adhering to them. It also does not appear to maintain full records of inspections or repairs on PPE.

**PASS alarm** The testing of PASS devices is required under s. 31.18 of Part 31. The Department’s OG 1.03.03 does not correctly track the requirements in this section of the regulations and should be updated. The Fire Chief reported that the devices are tested weekly in accordance with the WorkSafe BC requirements, but that these tests are not recorded.

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91 Self-contained Breathing Apparatus

92 We were provided with a selection of available records. It is not clear that the record keeping is comprehensive – for example, there is an air test record for 2018, but none for 2019 – though we expect that the external agencies could provide the necessary documents on request.

93 Personal Protective Equipment: this includes bunker gear, gloves, boots and helmets.


95 PASS alarms are “personal alert safety systems,” attached to each member’s SCBA, which initiates an alarm if the firefighter falls or collapses.
Exhaust  Under s. 31.32 of Part 31, fire departments need either to have an exhaust extraction system or to test air quality (and develop OGs to deal with the venting of apparatus exhaust in the fire halls). Hall 1 has an exhaust extraction system, but Hall 2 does not. Air quality has not been tested in Hall 2 and no OGs exist addressing the issue of exhaust venting.

Hose Testing Under NFPA 1962,96 and the OFC Audit Checklist, annual hose testing is required. The Department last checked its fire hose in 2015, and so is overdue on this item of equipment testing and maintenance.

Apparatus Under NFPA 1911,97 weekly apparatus checks are required. Most volunteer departments combine this with the usual weekly practice night. In addition, there are requirements for trip inspections under Part 37 of the Motor Vehicle Act Regulation. It should be noted that the pre-trip inspection is not required when responding to an emergency call.98 The Department has a vehicle checklist for the apparatus that covers the Motor Vehicle Act Regulation requirements and would serve for the NFPA 1911 requirements. The Fire Chief notes that apparatus inspections are done, though not with the fully required frequency and with gaps in the written records. The apparatus are receiving their annual motor vehicle inspection checks as required under the Motor Vehicle Act Regulations and the Department has records of such checks.

Ladders Under section 31.37 of the OH&S Regulations and NFPA 1932,99 the Department’s ground ladders are required to be tested annually. The Department has ladders checked annually by a third party tester, and the Fire Chief reports that the Department keeps records of the results.

Ropes Under s. 31.17 of the OH&S Regulations and NFPA 1983, the Department is required to keep records on its rescue ropes, including: date of purchase; and dates of each use, damage, cleaning and repair.

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98 Section 37.22 of Part 37 of the Motor Vehicle Act Regulation (B.C. Reg. 26/58, as amended) provides that: “If a commercial motor vehicle’s first trip of the day is to provide relief from an earthquake, flood, fire, famine, drought, epidemic, pestilence or other disaster by transporting passengers or goods, the inspection required by subsection (2) shall be carried out before the commercial motor vehicle’s first trip that is not for that purpose.” See also answer #1 in the “FAQ” section on the Commercial Vehicle Safety Enforcement website: https://www.cvse.ca/faqs.htm.

The Department is not currently keeping comprehensive records on its rescue ropes.

**Recommendations**

**Recommendation:** The OH&S program, as reflected in the Department’s policies and OGs, needs to be updated. This updating process should include members of the Department as well as BIM human resources staff.

**Recommendation:** The Department needs to operate a separate joint committee as required by s. 31.3 of Part 31 of the OH&S Regulation. This joint committee must include both worker and employer representatives. In relation to the operation of this committee, BIM, in consultation with the Department and members, should determine:

- whether the individuals who participate on the committees should be remunerated for the time they will be required to commit – perhaps with a separate monthly stipend, plus an hourly rate in the event that the joint committee has to undertake an accident investigation or similar enquiry;
- where training is required for committee members, BIM should consider setting a compensation rate for members and officers who are required to take this training.
- where possible, the regular monthly meetings of the joint committee could be timed to occur at the end of the one of the regular practice nights.

**Recommendation:** BIM should make application to WorkSafe BC for permission to operate a single joint committee covering both Hall 1 and Hall 2.

**Recommendation:** BIM should work with the Department to develop the records keeping practices and systems necessary to meet OH&S requirements and best practices, for all Department operations.
Fire Prevention

Fire Inspections

As noted in the Regulatory Matters section above, the Fire Services Act requires a municipality to have a “regular system of inspections”, an undefined term, which creates a statutory obligation for the Municipality to ensure that fire inspections are undertaken. Under the Fire Services Act, the Fire Chief of a municipal department has the inspection powers of an LAFC, as do any other persons named by the Fire Chief.

Information from the Department indicates that in the past the Fire Chief and on occasion other members, have carried out some fire inspections. These inspections appear to have occurred only on request. Currently there are no BIM policies, Department operational guidelines or express authority under Bylaw No. 41, to address this requirement and there are no records available to validate that inspections have been regularly conducted in recent years.

The most recent Fire Department Service Plan (2012) (the “2012 Service Plan”) contained expectations for fire inspections, compliance enforcement and fire safety plan reviews. While activity in these areas could not be confirmed, it is noted that there have not been any related standards identified or training received specific to these areas.

Indirectly related to the need for regular fire inspections is the Interior Operations Service Level requirement for the Department to create pre-incident plans for certain types of buildings. At present there is no information available to indicate that this requirement has been addressed and a building fire inspection process can often gather relevant information needed for pre-incident plans.

**Recommendation:** To support a compliant fire inspection program the following actions are recommended:

- identify the minimum training requirements for fire inspectors;
- provide training to the Fire Chief and one alternate;
- conduct a risk analysis of buildings to determine the frequency and nature of inspection requirements (it may be necessary to out-source this work);
- develop an operational guideline for a fire inspection program; and
- create a filing system for inspection reports, follow ups and enforcement actions.

Fire Investigations and Fire Reporting

As noted in the Regulatory Matters section, above, the Fire Services Act requires that all fires be investigated and reported to the OFC in the manner required by the Fire Commissioner. The Fire Chief, as the LAFC, is responsible for fulfilling these duties.
Currently there are no operational guidelines covering fire investigation or reporting, and the Department has filed reports for some but not all fire events to which it has responded. Further research was also unable to identify any internal post-incident reports being completed by the Department, which is a potential liability concern.

As with fire inspectors, under the current Fire Services Act there is no minimum training standard for fire investigators and the Department has not identified any internal standard for persons conducting fire investigations.

**Recommendation:** To support a compliant fire investigation program the following actions are recommended:

- identify the minimum training requirements for fire investigators;
- provide investigation training to the Fire Chief and any designated investigators;
- develop an operational guideline for fire investigation and OFC reporting;
- develop an operational guideline for internal post-incident reporting; and
- ensure there is a system of records retention for investigation and incident reports.

**Public Education**

The 2012 Service Plan identified several public education-related activities to be supported by the Department. These include:

- school programs to familiarize students with fire station operations/safety;
- neighbourhood meetings on fire protection issues;
- Department open house;
- social events/fundraisers; and
- fire extinguisher training at the municipal hall.

The Department currently only undertakes an annual open house and targets visits to the schools once per year.

There is currently no operational guideline related to formalized fire prevention or public education activities. It was noted that the Fire Smart program for interface fire protection falls within the mandate of the Emergency Program Coordinator, however the Fire Chief has provided some support to that program (and, until 2017, the Department itself was responsible for the Emergency Program).
The 2007 Community Wildfire Protection Plan contains a recommendation that calls for a full or part-time fire prevention officer position to address the numerous fire risk issues identified in that plan. Given the need for the Department to develop and implement an inspection program, and to undertake the necessary investigation and reporting of fires within the Department’s jurisdiction, there is a need for such a position. It also recommended that the position be supported with initial and maintenance training.

Recommendation: Identify key public education programs and create an operational guideline in support of those activities.

Recommendation: BIM should consider the creation of a part or full-time fire prevention officer position to address the need to develop and implement a fire inspection system, to conduct fire investigations and carry out the related fire reporting to the OFC, and to address the issues identified in the 2007 Community Wildfire Protection Plan.

Incident Pre-Planning

The need to undertake and document pre-incident plans is required for operational purposes where the fire department intends to deliver an Interior Operations level of service. As identified in the Playbook, an Interior Operations fire department may enter simple structures such as a single-family dwelling or other small structures, however larger or more complex structures must be pre-planned and training conducted in order to undertake fire operations within them.

Currently the Department has a binder containing an index of 71 commercial buildings and a partially annotated site plan for each identified location. These documents are dated either July 2005 or September 2006, and there is no information to indicate that the contents have been verified or updated in the intervening years. Certain of the businesses have changed occupiers and use in the interim. While the existing information is helpful, it should not be relied upon unless it is verified as being current and accurate.

Given the small footprint of many of the commercial premises, there may not be a requirement to pre-plan all of the locations, although it would be prudent to do so. There are several steps that should be considered:

1. Verification of the index of premises to add new ones, update the type of occupancy of the existing businesses and make determinations on the level of complexity present.

2. Expand the pre-plan information template to include emergency contact information, exterior photos of the building (all sides), listing of any hazardous materials on site (location, name/CAS #, quantity), floor layout for each level of all multi-storey buildings

100 B.A. Blackwell & Associates Ltd., The Municipality of Bowen Island: Community Wildfire Protection Plan (April 2007), Recommendation 20 at p. 34.
and site access issues. Note: distances and measurements should be included in the site diagram and building layout.

3. Update the plan for each identified location using a prioritized approach, based on highest risk uses and structures.

4. A copy should be kept in each of the major apparatus and the Fire Chief’s vehicle for use by incident commanders. Plans can be loaded into either tablets or smart phones, in addition to paper copies.

Consideration should also be given to identifying any non-commercial structures that exceed the described “single-family dwelling” (anything over ~3500 sq. feet) due to their overall size or complexity. These buildings will require similar consideration in terms of pre-planning for any potential interior operations to occur. We note that there are large residential buildings on the Island which present significant access issues due to topography. These risks also should be pre-planned.

From a fire prevention perspective, the process of updating the existing pre-incident plans will be beneficial as all of the locations will also require a fire inspection, as detailed in other parts of this report. As such there is an opportunity to undertake both activities at the same time to minimize any duplication of effort.

**Recommendation:** That the BIM add a requirement for the Department to review all business licence applications and renewal requests.

**Recommendation:** When the Department receives a business licence for its review, the Department will take action to ensure the premise has a current fire inspection and pre-incident plan.

**Recommendation:** The Department amend its operational guidelines to include a process to ensure that when a fire inspection is undertaken a pre-incident plan is created or updated for that premise.
Emergency Program

BIM's Emergency Program is now external to the Department's functions and is managed by an Emergency Program Coordinator (the “EPC”). The program is guided by the Emergency Program Executive Committee, which includes both the EPC and the Fire Chief. The EPC reports directly to the Chief Administrative Officer.

There are no specific Emergency Program responsibilities assigned to the Department, however the Fire Chief does provide support to the program in a number of ways, including:

- sharing (making) space for storage of emergency supplies;
- providing Department personnel for exercises and public education/outreach activities;
- undertaking training (e.g. Emergency Operation Centre training taken by the Fire Chief); and
- providing support in the creation and updating documents (e.g. HRVA, the evacuation plan, etc.).

The Department does not train municipal staff, but it does sometimes take training that is offered to municipal staff, such as rapid damage assessment and Emergency Operation Centre training. The EPC looks after planning and conducting exercises as well as coordinating the maintenance of Emergency Program equipment.

The EPC looks after securing grant funding, designing the program, conducting Fire Smart assessments, administering rebates, organizing public education events and final grant reporting. The position has been responsible for managing the Fire Smart program on the Island for the last two years.
Budget Analysis

Budget Process

The Chief Financial Officer (the “CFO”) has developed a comprehensive budget planning document for all BIM’s departments that outlines the key activities and a schedule for completing the process over a five-month period. The initial steps include meeting with divisional managers to provide budget guidelines as well as to update the capital project and non-labour operating requests. The BIM Finance Department then performs an analysis of the budget and calculates the revenues and the tax rates required to balance the budget. The Finance Department and the divisional managers meet again to update the mandate, service profile and key projects information to be included in the budget book. The results are reviewed by the managers and the CAO and are then sent to the Finance Advisory Committee for review and comment. The budget information is presented to the public before Council approves the final budget with the five-year plan.

Fire Department-Specific Process

The Department has developed a system for managing capital and operating budget requirements and in the past, has summarized the information in a service plan report. The most recent report made available to the Consultants is the 2012 Service Plan, which includes information about services, activities and budget information. For budget planning purposes, the Fire Chief needs to have a clear understanding of the municipal budget process and the funding model for operating and capital expenses. For new divisional managers, budget management can be challenging given the complexities of municipal financial processes, especially in the case of a fire chief with limited administrative support. For these reasons, it is important for the Finance Department staff to provide additional support and assistance when needed.

The Fire Chief has signing authority for amounts up to $15,000 for projects approved in the Department’s budget. Purchases exceeding that amount need to be signed by the CFO.

Fire Department Budget

Operating Budget

The Department’s operating budget over the past three years (2017 to 2019) was as follows (actual revenues for 2017 and 2018 are shown in brackets):
Table 3: BIFD Operating Budget 2017-2019

<table>
<thead>
<tr>
<th>Item</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$5,200 ($7,941)</td>
<td>$5,200 ($5,370)</td>
<td>$5,200</td>
</tr>
<tr>
<td>Budgeted Expenses</td>
<td>$354,940</td>
<td>$373,500</td>
<td>$377,400</td>
</tr>
<tr>
<td>Net Taxation Amount</td>
<td>$349,740</td>
<td>$368,300</td>
<td>$372,200</td>
</tr>
</tbody>
</table>

The Department's budgets for the period 2017 - 2019 and planned for 2020, are show in Figure 1, below.

**Figure 1: BIFD Budgeted Expenses 2017-2020**

In each of the 2017 and 2018 calendar years, the Department's actual expenses slightly exceeded the budget for the year. The 2017 budget year saw approximately a $14,000 overrun, with the principal variances being “Telephone & Other Communication (~$13,000 over budget),” “Travel” (~$2,600 over budget) and various maintenance costs (~$19,000 over budget in aggregate) offset in part by lower spending in a number of areas, including “Courses and Training” (~$13,000 under budget) and “Small Equipment Repair / Replacement” (~$5,000 under budget). In 2018, the total cost overrun was less than $4,000.

**Revenues**

Generally, fire departments do not generate significant revenues and, as a result, most of the Department’s costs are funded through property taxation, as shown in Table 3 above. The financial information provided shows that fees are charged for fire service inspections, access permits and miscellaneous services. The BIM website indicates that fees are charged for Burn Permits but these are purchased at City Hall and may require an inspection by the Fire Chief.
In 2019 YTD, the Department collected a total of $4,650 for services including:

- $2,450 for fire service inspections;
- $2,200 for access permits; and
- $0 for miscellaneous services.

The average annual revenue collected for fee-based services for the three-year period 2017 to 2019 is approximately $6,000. Figure 2 below shows the annual revenues for the three-year period 2017 to 2019.101

![Fire Department Revenues 2017-2019](image)

**Figure 2: Fire Department Revenues 2017-2019 [2019 figures are incomplete]**

**Expenditures**

The significant operating expenditures for the Department include salaries for the Fire Chief and part-time officer positions (Deputy Fire Chief and Training Officer), the benefits program for Department members, courses and training, vehicle and small equipment operating costs, fire hall maintenance, communications and utilities.

**Table 4: Fire Department expenditures by cost centre**

<table>
<thead>
<tr>
<th>Expenditure</th>
<th>2019</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries &amp; Benefits (for paid officer positions)</td>
<td>$157,900</td>
<td>41.8</td>
</tr>
<tr>
<td>Benefits - Volunteers</td>
<td>$90,000</td>
<td>23.8</td>
</tr>
<tr>
<td>Courses &amp; Training</td>
<td>$31,500</td>
<td>8.3</td>
</tr>
<tr>
<td>Vehicle Fuel/Maintenance/Insurance</td>
<td>$25,600</td>
<td>6.8</td>
</tr>
<tr>
<td>Hall Maintenance/Utilities</td>
<td>$21,000</td>
<td>5.6</td>
</tr>
</tbody>
</table>

101 2019 Revenues have not been updated to Dec 31.
<table>
<thead>
<tr>
<th>Expenditure</th>
<th>2019</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Equipment Replacement/Repair</td>
<td>$15,000</td>
<td>4.0</td>
</tr>
<tr>
<td>Administration/Office/Miscellaneous</td>
<td>$14,400</td>
<td>3.8</td>
</tr>
<tr>
<td>Dispatch Services</td>
<td>$6,200</td>
<td>1.5</td>
</tr>
<tr>
<td>Insurance</td>
<td>$5,700</td>
<td>1.5</td>
</tr>
<tr>
<td>Conference/Travel</td>
<td>$4,500</td>
<td>1.2</td>
</tr>
<tr>
<td>Telephone</td>
<td>$3,000</td>
<td>0.8</td>
</tr>
<tr>
<td>Uniforms</td>
<td>$1,500</td>
<td>0.4</td>
</tr>
<tr>
<td>Association Dues</td>
<td>$600</td>
<td>0.2</td>
</tr>
<tr>
<td>WCB Volunteers</td>
<td>$500</td>
<td>0.1</td>
</tr>
<tr>
<td>Total Expenditures</td>
<td>$377,400</td>
<td>100</td>
</tr>
</tbody>
</table>

Figure 3 below further illustrates the distribution of the fire operating budget by cost centre. Salaries and benefits for the paid fire positions makes up 41.8% of the budget, followed by benefits for volunteers at 23.8% and 8.3% for courses and training.

Figure 3: Fire Department Expenditure Breakdown for 2019

A benchmark survey was completed with the six comparable fire departments (see the Benchmark Survey Analysis section for more detail). The benchmark departments included Gabriola Island, Mackenzie, Invermere, Grand Forks, Pender Island and Gibsons. As shown
below, the Department has the lowest operating budget in the comparison group by a significant margin.

![2019 Fire Operating Budget Benchmark Comparison](image)

**Figure 4: Fire Operating Budget Benchmark Comparison**

**Tax Cost and Tax Rates**

It is useful to examine the tax cost to residents of the services provided by the Department, relative both to the historical cost, and comparable jurisdictions.

In the year before BIM was incorporated, the tax cost of the Department for a residential homeowner was $0.50/$1,000 of assessed value. At the time, this translated into a cost of about $150 per average home.\(^{102}\) In 2019, the effective mil rate (the portion of the municipal tax rate needed to fund the Department) had dropped from $0.50 to less than $0.15/$1,000. The cost per average home in 2019 for fire services was $170, representing a “dollar-per-year/average house” increase over the 20 years since incorporation.\(^{103}\) In 2019, the Department accounted for less than 7% of the aggregate municipal budget.

BIM’s tax base is almost exclusively residential. In that regard, it is similar to Invermere, Pender Island and Gabriola, each of which lacks a large commercial or industrial property base. In the case of Invermere, in 2019, the tax cost of its fire department produced an effective mil rate of nearly $0.50/$1,000 of assessed value, representing a cost for the average home of about

\(^{102}\) Sussex Consulting Report, p. 28.

\(^{103}\) The calculations were made using data provided on the Province’s website at: https://www2.gov.bc.ca/gov/content/governments/local-governments/facts-framework/statistics/tax-rates-tax-burden accessed 28 January 2020, along with the budget information provided for the Department.
$235. The Invermere department constitutes about 13.7% of the 2019 Invermere municipal budget.

Pender Island’s fire department is provided through a local service area operated by the Capital Regional District. In 2019, the mil rate for the service was set at more than $0.83/$1,000 of assessed value and cost the average homeowner about $300.104

Gabriola’s fire department is operated by and through an Improvement District, which does not appear to publish its financial reports. As such, we were unable to determine the cost for the average home. The mil rate, however, is $0.64204/$1,000 of assessed value for residential properties.105

**Compensation and Benefits**

For 2019, the total compensation for BIFD volunteer members consists of benefits and does not include any pay for attending practices or responding to incidents. The 2017 – 2019 financial documents show annual budget amounts of $90,000 which equates to about $3,100 per member (based on 29 eligible members).

The amount paid for benefits in the 2017 – 2019 period are shown in the table, below:

*Table 5: BIFD Benefits*

<table>
<thead>
<tr>
<th>Account</th>
<th>2017 Budget</th>
<th>2017 Actual</th>
<th>2018 Budget</th>
<th>2018 Actual</th>
<th>2019 Budget</th>
<th>2019 Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-2-0241-130</td>
<td>85,000</td>
<td>76,475</td>
<td>90,000</td>
<td>87,619</td>
<td>90,000</td>
<td>87,058</td>
</tr>
</tbody>
</table>

Total compensation was part of the benchmark survey. Of the six departments surveyed:

- four departments have a benefits package. Annual benefit costs per member for these departments were:
  - Invermere - $120
  - Pender Island - $1406
  - Mackenzie - $820
  - Grand Forks - $785;

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104 The 2019 Pender Island mil rate can be found here: [https://www2.gov.bc.ca/gov/content/taxes/property-taxes/annual-property-tax/tax-notice/tax-rates](https://www2.gov.bc.ca/gov/content/taxes/property-taxes/annual-property-tax/tax-notice/tax-rates) (use the 2019 schedule, at line 12,494). The cost per home is based on the information provided to us by the Department, as a percentage of the cost/home shown in Capital Regional District, *Fiscal Year 2019: Annual Fiscal Plan*, at p. 1445. The CRD budget numbers are somewhat higher, showing a higher budget ($944,867) and higher cost/home ($371.81). It may be that the Department did not include all capital expenditures and/or backed out certain administrative overheads charged by the CRD.

105 The 2019 Gabriola mil rate can be found here: [https://www2.gov.bc.ca/gov/content/taxes/property-taxes/annual-property-tax/tax-notice/tax-rates](https://www2.gov.bc.ca/gov/content/taxes/property-taxes/annual-property-tax/tax-notice/tax-rates) (use the 2019 schedule, at line 13,448).
- five departments pay their members for responses to incidents. Compensation for responses ranges between $14 to $21 per hour; and
- all six departments pay their members for attending practices. Compensation for practices ranges from a flat rate of $20 per practice or $14 to $22 per hour.

<table>
<thead>
<tr>
<th>Department</th>
<th>Benefits</th>
<th>Paid for Call-Outs</th>
<th>Paid for Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowen</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Gabriola</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Gibsons</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Grand Forks</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Invermere</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Mackenzie</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Pender</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Compensation Policy

BIM established the Staff Compensation Policy #01-05 on February 28, 2005 (last updated November 17, 2008) with the intent to:

- Attract, retain and motivate high performing employees.
- Offer fair and equitable market competitive compensation.
- Align individual performance to objectives of the Municipality.

In addition, senior management, in conjunction with the elected Council will review the compensation policy from time to time, and may amend the policy, as deemed appropriate.

Under this policy, the principles guiding BIM when setting compensation include: a benchmark to the 60th percentile of the comparable organizations; base salary annual increases based on CPI; provision of benefits that are generally competitive with peer organizations; and that all components of the total compensation package be communicated to employees to ensure they understand their compensation and benefits plan.

**Recommendation:** The Municipality should undertake a review of the current total compensation rates for all Department volunteer positions with a view to aligning compensation levels with Policy #01-05, the emerging trends for recruitment and retention in volunteer fire departments and the current labour market conditions on Bowen Island.
**Recommendation:** The Municipality should engage the members of the Department to communicate the findings of the compensation review and explain any changes to the current program.

**Training Budget**

The BIFD Training Budget includes courses and training for all positions in the Department. A detailed review of the training expenditures in 2018 indicates that funds are used for internal and external training, including tuition and travel expenses. Total training costs to achieve the Interior service level vary from department to department depending on its ability to provide and maintain the training in-house with its own instructors.

As shown in Table 7, the Department under-spent the training budget by 30% over the past three years so the actual training expenditures averaged $713 per member. As discussed in the Training Review section of this report, it is anticipated that related costs will increase for the next two to three years as the Department works to meet the training requirements for the ‘Interior Operations’ service level.

<table>
<thead>
<tr>
<th>BIFD Training</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>3 YR Total</th>
<th>3 YR AVG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget</td>
<td>$31,450</td>
<td>$31,500</td>
<td>$31,500</td>
<td>$94,450</td>
<td>$31,483</td>
</tr>
<tr>
<td>Actual(^{106})</td>
<td>$18,027</td>
<td>$27,544</td>
<td>$18,581</td>
<td>$64,152</td>
<td>$21,384</td>
</tr>
<tr>
<td>Variance</td>
<td>$13,423</td>
<td>$3,956</td>
<td>$12,919</td>
<td>$30,298</td>
<td>$10,099</td>
</tr>
</tbody>
</table>

Table 8 and Figure 5 show the 2019 training budget comparison with the benchmark departments. The Department’s actual expenditures are also shown in square brackets.

<table>
<thead>
<tr>
<th>Department</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>3 YR Total</th>
<th>3 YR AVG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowen</td>
<td>$31,450</td>
<td>$31,500</td>
<td>$31,500</td>
<td>$94,450</td>
<td>$31,483</td>
</tr>
<tr>
<td></td>
<td>[$18,027]</td>
<td>[$27,544]</td>
<td>[$18,581]</td>
<td>[$64,152]</td>
<td>[$21,384]</td>
</tr>
<tr>
<td>Gabriola</td>
<td>$20,000</td>
<td>$25,000</td>
<td>$25,000</td>
<td>$70,000</td>
<td>$23,333</td>
</tr>
<tr>
<td>Gibsons</td>
<td>$40,000</td>
<td>$40,000</td>
<td>$40,000</td>
<td>$120,000</td>
<td>$40,000</td>
</tr>
<tr>
<td>Grand Forks</td>
<td>$20,000</td>
<td>$20,000</td>
<td>$22,000</td>
<td>$62,000</td>
<td>$20,667</td>
</tr>
<tr>
<td>Invermere</td>
<td>$24,000</td>
<td>$24,000</td>
<td>$19,000</td>
<td>$67,000</td>
<td>$22,333</td>
</tr>
<tr>
<td>Mackenzie</td>
<td>$14,000</td>
<td>$20,000</td>
<td>$20,000</td>
<td>$54,000</td>
<td>$18,000</td>
</tr>
<tr>
<td>Pender</td>
<td>$45,000</td>
<td>$46,000</td>
<td>$47,000</td>
<td>$138,000</td>
<td>$46,000</td>
</tr>
</tbody>
</table>

\(^{106}\) 2019 Actual is estimated
The figure below shows the benchmark departments with the designated service level and compares the average 2019 annual training budget allocated for each member.

**Figure 5: Benchmark Comparison of Training Budget Costs**

**Figure 6: Benchmark: Annual Training Budget per Member**
Capital Budget

Capital Reserves for the Fire Department

On January 1, 2000, the Municipality took over responsibility for the provision of fire services on Bowen Island. As part of the transition, under Bylaw No. 12 a statutory reserve fund was established for the purpose of providing funding, solely for “fire protection purposes.” While this is a broad description of what the funds can be used for, we note that BIM has a policy that statutory reserves are generally restricted for items of a capital nature. This policy would not preclude the use of funds for special initiatives such as start-up cost for new or improved Department training or records keeping systems or similar initiatives.

In 2000, assets from the improvement district were transferred to the Statutory Fire Protection Reserve Fund (the “Fire Reserve”) in the amount of $103,595. The balance in this fund on 31 December 2018 was $342,142.

The Fire Reserve is funded from available monies from the current year’s revenue or as available from any general operating surplus. The amounts deposited vary from year to year so as to fund upcoming capital expenditures for equipment\(^{107}\) required for fire protection. Since the establishment of the reserve fund in 2000, amounts deposited to this fund have been sourced as follows: $1,143,151 from operating surpluses; and $183,653 generated in interest income for a total of $1,326,804. As of 2018, $1,090,267 has been allocated out of this fund to cover capital purchases for the Department. Table 9 shows the financial activity in this fund since its establishment.

Table 9: Statutory Fire Reserve - 2000-2018\(^{108}\)

<table>
<thead>
<tr>
<th>Year</th>
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\(^{107}\) Financial reports include ‘equipment’.

\(^{108}\) Source: Bowen Island Municipality audited financial statements.
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Asset Replacement Fund

When needed, funds are transferred from the Fire Reserve to the Asset Replacement fund for the approved equipment requests. The CFO confirmed that the Asset Replacement fund is the only reserve fund for this purpose.

As an example, monies from the Fire Reserve have been used for fire equipment purchases including:

- annual fire hose replacement – $5,000 per year;
- auto extrication equipment as required; and
- fire turnout gear replacement – $10,000 per year.

Apparatus Life Cycle and Replacement

NFPA 1901 - *Standard for Automotive Fire Apparatus* provides guidelines for fire vehicle design, operation, maintenance, testing and replacement. Appendix D to NFPA 1901 notes that fire apparatus that is more than 20 years old poses increasing risks to fire departments and their members, as the vehicles become less reliable and do not include the safety features of newer apparatus. The age and condition of fire apparatus are also considered in determining insurance ratings by the Fire Underwriters. Specific criteria about the age and condition of frontline and reserve apparatus are used to assess the capabilities of a fire department to manage fire incidents (see the section of the report that examines the Fire Underwriters’ review process in greater detail).

For the purposes of this section of the report, our focus is on planning for the replacement of fire vehicles based on best practices in the fire service. Generally, the accepted practice for fire apparatus service life is a maximum of fifteen years for frontline service, five years as a reserve unit and retired after 20 years of total service. The time frames are based on the completion of regular maintenance and testing of fire apparatus by qualified service technicians with complete records for the life of each vehicle. Under the Fire Underwriters’ rating system, it is possible for
smaller communities to extend the life of apparatus to 25 years, subject to approval by the Fire Underwriters and the provision of annual testing of the vehicle in question.

The Department is equipped with a fleet of vehicles that are designed to meet the rigorous needs of fire and rescue operations in a unique geographical setting. Some of the challenges noted during the survey of the fire service area include a number of steep and narrow road systems, water supply issues, limited accessibility to structures with extended private driveways and the presence of a number of larger homes (some of which also present access challenges). These issues must be considered in the specification of any new fire vehicles to ensure effective delivery of emergency services.

Presently, the BIFD fleet includes the following vehicles (see Appendix 6 for more detail):

- Fire Chief’s Truck - 2015 Chevrolet Silverado;
- Rescue 30 – 2009 International 4-wheel drive;
- Engine 30 – 2005 Spartan E-One pumper;
- Engine 31 – 1989 Freightliner Pumper/Tender;
- Tanker 30\textsuperscript{109} – 2013 Freightliner Coranado;
- Engine 32 – 1978 Dodge 4-wheel drive wildfire bush truck;
- Utility 30 - 1997 Dodge Dakota 4-wheel drive; and
- Wildfire Trailer – 2012 single axle.

Both Engine 31 and Engine 32 are overdue for replacement. BIM and the Department have plans in place to acquire replacement apparatus:

- $550,000 has been requested to replace Engine 31 (the 1989 Freightliner), which is no longer ratable under the Fire Underwriters system, and is well past the life span recommended by the Fire Underwriters and under NFPA 1901.
- $100,000 has been requested to replace Engine 32 (1978 Dodge 4-wheel drive wildfire bush truck).
  
  \textbullet\ Note: $100,000 was approved in the 2019 capital budget for this replacement, but the funding was removed due to inactivity in the purchasing process and the unlikelihood that the funds would be spent in 2019. The monies were returned to the BIM general capital fund.

\textsuperscript{109} Tanker 30 is the unit designation used by BIM; this type is often also known generically in the BC fire service as a Tender.
The vehicle replacements included in the proposed 2020 capital budget should be prioritized, but we note a concern from the Department that the proposed funding is insufficient for the purchase of replacement apparatus that meet its needs. The estimated replacement costs of these two vehicles are anticipated to be $650,000 for Engine 31 and approximately $300,000 for Engine 32.

**Recommendation:** The Department should review the current requirements for new apparatus based on the service delivery plan and develop specifications that can be used in the drafting of a Request for Proposal.

**Recommendation:** The Department and BIM staff review the anticipated costs for the replacement vehicles and develop budgets reflecting the outcome of such review.

**Small Equipment**

Small equipment capital purchases are funded from the Equipment Replacement Fund. The CFO advised that the different municipal departments are encouraged to ‘bundle’ items to meet the minimum requirement of $5,000 for capital requests.

The Department’s total 2020 capital requests for small equipment is $44,100, consisting of the following:

- $25,000 for SCBA replacements;
- $15,000 for fire hose replacement; and
- $4,100 for turn out gear replacement.

**Fire Hall Replacement**

The Municipality plans to replace the existing Hall 1 with a new building that will house both the Department and BIM’s emergency planning function. Funding for the new building is estimated at $3.0 million and the Municipality has adopted Bylaw No. 441, 2017 to authorize the borrowing of up to $3,000,000 for the development and construction of a Main Fire Hall and Emergency Operations Centre (the “EOC”). The timeline for the project has been delayed due to unforeseen issues with the tendered bids for construction.
Strategic Planning

A significant proportion of this Review required, and is focused on, providing an assessment and evaluation of key aspects of the Department’s operation and administrative structures and systems, including training, response activities, apparatus, equipment and fire halls. One of the other goals is to map out a process to be followed by the stakeholders that will improve communications, enhance transparency of decision-making and establish an agreed process for implementing and managing change in the future. This section of the report, therefore, provides a wider view of the Department in terms of its relationship within the municipal corporation, and offers recommendations for improvement and a path forward to achieve these broader objectives.

Bowen Island Incorporation and Department Integration

When Bowen Island was incorporated as a municipality in 1999, the improvement district responsible for the Department was required, by policy of the Province, to be dissolved and the service rolled into the new civic government. This approach to improvement districts had been followed as Provincial policy since the late 1980s, and is summarized in a 2004 document entitled “Improvement District Conversion Guide”. With respect to municipal restructuring, the policy states:

“In the event of the incorporation of a new municipality or a boundary extension for an existing municipality, improvement districts, providing services in the area that becomes part of the municipality are automatically converted.”

Dissolution, however, can have a considerable impact on the governance, administration, operations and culture of an improvement district service, particularly one like the Department which operated relatively autonomously and relied solely on volunteers, who both delivered emergency response services and had deep social ties to the broader Bowen Island community. In addition, such a material organizational transition, particularly for a volunteer group, presents a significant challenge for those overseeing the incorporation change management process.

At the time of the conversion, however, the new municipal council was faced with the daunting task of building a municipal government and developing all of the necessary bylaws, organizational structures and services for that purpose. The Department was one of the few


services that actually was fully functional as of the date of incorporation. Understandably, therefore, it was not the first priority, and, in many respects, the Department and its volunteers appear to have been largely left to their own devices for much of BIM’s history. The Department’s volunteer Fire Chiefs and senior officers were incorporated into the new administrative structure, including, among other things:

- reporting to Council on Department activities;
- preparing reports, recommendations and budgets;
- managing financial matters;
- advising on municipal development issues as they potentially impacted the Department or fire risk on Bowen Island;
- creating and initially managing the BIM Emergency Program;
- helping develop several draft iterations of a new fire service establishment and operational bylaw; \(^{112}\) and
- helping spearhead the efforts to build Hall 2 and gain approval for the replacement of Hall 1.

Despite this integration at the most senior level of the Department, daily Department operations appear to have largely continued to function much as they had prior to 1999. Notwithstanding the several reports (and recommendations) from the Fire Underwriters, and the advent in 2014 of the Playbook, with its renewed focus on training and records keeping, the Department’s internal functions have continued much as they had in the past. There does not appear to have been any material attempt to create a guiding strategic plan – one that brought together Department members, municipal staff and elected officials – to formally map out the Department’s development and priorities.

At the same time, in the 20 years that have passed since incorporation of BIM, the landscape has changed materially for fire departments and their “authorities having jurisdiction”. While the Playbook was, in many respects, a crystallizing event (particularly for local governments), in fact the changes trace back to the early 2000s. These changes have had a particularly significant impact on volunteer and paid-on-call departments, as the increased administrative requirements and potential for liability has greatly impacted workloads and driven the need for improved internal processes. Increasingly, many local governments in BC, which have historically relied on volunteer and paid-on-call members, have recognized a tipping point has been reached which also requires a significant change in approach. Some factors precipitating this need for change include, but are not limited to:

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\(^{112}\) As noted in the Bylaw section of this report, these efforts did not result in an updated bylaw – which is a matter that now needs immediate attention.
• growing risk management and liability concerns;
• increasingly prescriptive occupational health and safety requirements and related concerns (including the Criminal Code amendments which potentially give rise to criminal liability for material occupational health and safety violations);113
• legislative and regulatory changes (e.g., the Playbook and new Fire Safety Act);
• an increasing focus on ensuring proper training, arising in part out of line of duty deaths among volunteer firefighters and as a response to other changing regulatory requirements;114
• evolving Fire Underwriter rating criteria and requirements set by insurance companies;
• increased public expectations for service and growing service demands on departments (e.g., for departments which provide first medical responses, the aging demographics of many communities has led to a significant increase in calls for service);
• changes arising from new economic challenges for many families, combined with lifestyle changes that have adversely affected volunteer recruitment and retention; and
• a need to meet the growing administrative requirements driven by these other factors, including proper and comprehensive records keeping.115

These changes are material, particularly in terms of their impact on the volunteer/paid-on call departments, which have historically relied on their members not only to respond to emergency incidents, but to undertake all tasks required for compliance with legislative and administrative requirements. Most volunteer and paid-on-call departments have had to revisit their structure, organization and approach in light of the changes enumerated above, or risk being overwhelmed by them. At the same time, the requirements are not optional: if they are not met, the risk of liability exists for both the AHJ and, in more extreme cases, personally for Department members.

113 The amendments to the Criminal Code were made in 2004 under Bill C-45, An Act to Amend the Criminal Code (Criminal Liability of Organizations).
114 The Playbook’s genesis traces directly back to the line of duty death of Chad Schapansky, a member of the Clearwater Volunteer Fire Department, in 2004. See: BC Coroners Service, Judgement of Inquiry into the Death of Chad Jerry Schapansky (Case no. 2004: 565: 0011), 2 Feb. 2006 (the “Schapansky Inquiry”).
115 One of the critical issues noted in the Schapansky Inquiry, was that the Clearwater department, which was then operated by an improvement district, lacked the necessary records demonstrating the training and qualification of the individuals involved in the incident (including the entry team members and incident commander). They also lacked records relating to the maintenance of critical life-safety equipment in use by the entry team. Schapansky Inquiry, at pp. 4 – 5, citing the WorkSafe BC inquiry into the incident.
Fire Improvement District Transition

Process Overview

The general process and tasks related to transitioning an area from a rural status to an incorporated municipality are complex, challenging and time consuming. The Province provides the legislative authority, broad direction for the process and requirements (as outlined in a set of Letters Patent), as well as short-term assistance including transitional funding.

It is then up to the relevant municipal council, and its staff, to ensure compliance with the basic legislative requirements contained in the Letters Patent, in addition to the Community Charter, Local Government Act and any other provincial or federal legislation which regulates municipal operations. It is also then left to the council to prepare and implement a strategic plan and undertake all other tasks required to establish the new municipality, including but not limited to: determining its organizational structure, defining the services to be provided, and creating an appropriate financial framework.

The transition process often takes a number of years and involves extensive interaction, collaboration and cooperation with previously existing service providers, the regional district, improvement districts and in the case of Bowen Island, the Islands Trust. The level of effort and challenges faced to achieve an orderly and seamless transition, are principally driven by the number, scope and nature of the existing services to be absorbed into the newly incorporated municipality, as well as the robustness and detail included in the strategic transition plan.

Transitions involving the integration of existing, independent organizations such as the Bowen Island Fire Protection District into a newly incorporated municipality often poses a significant change management challenge. The importance to the well-being of residents of the Island from the services provided, are difficult to overestimate. In addition, the comparative cost savings when fire services are provided by volunteers, as is the case for the Department, are enormous, which more than justifies devoting resources to ensuring the Department and its members are properly integrated into the municipal structure, and recognizing the need to manage their participation differently than would be the case for a career department. Given the volunteer membership of the Department, with a long history (and culture) of service to the community, the importance of ensuring a sensitive, well-designed and properly implemented change manage process, is essential to successful integration into the municipal organization.

Transitional Framework

The Letters Patent for the BIM incorporation established a Fire Protection Services Advisory Committee. The stated purpose of this advisory committee was to provide advice to Council on any and all matters related to the fire protection service. In general terms, in cases of significant governance change, transitional committees are seen as an excellent change management vehicle, to help ensure an orderly transition by:

- providing a forum for expressing concerns, identifying issues and unanticipated challenges of the change;
• developing strategic plans and directions to manage change;
• providing an opportunity for on-going communications and consultation among and between stakeholder groups;
• providing an on-going forum for consensus building among stakeholders; and
• assessing and identifying strategies and approaches to mitigate potential negative impacts of the change.

Under the Letters Patent, the Fire Protection Services Advisory Committee was to commence on January 1, 2000, and remain in place until April 30, 2000. It was thereafter to be continued or terminated at Council discretion. We have not seen any documentation related to the operation of this committee, and no one we have met with has any institutional knowledge relating to this aspect of the 1999 incorporation process.

In terms of legislative transition, one of the fundamental components, which normally characterizes the advancement of the dissolution and conversion to a municipal service (and be part of a plan), is the adoption of a municipal fire service regulation bylaw. Bowen Island has now been incorporated for 20 years, and following several unsuccessful attempts, has not yet adopted such a bylaw. As noted in the “Regulatory Matters” section, above, the Municipality therefore continues to rely for the fire department regulatory authority on Bylaw No. 41, which it inherited from the improvement district.

Proposed Path Forward

Based on our review, there are a number of change management matters to be addressed to properly integrate the Department and its members into the municipal structure and define an agreed path forward.

The proposed path forward includes a two stage process: first, the development of a new approach to engagement and communications between and among the key stakeholders, i.e. Council, the volunteer members of the Department and senior municipal staff members; and second, development of a strategic plan for the Department which also promotes its integration with the municipal organization.

Stage One

The intent of Stage One (as outlined below) is to achieve a good faith, written commitment from all stakeholders, to develop stronger working relationships with each other, based on mutual respect, trust, cooperation and openness. The proposed form of written commitment is a Memorandum of Understanding (“MOU”) agreed to by the stakeholders (including volunteer members, officers, BIM staff and elected officials). The MOU should be developed through a series of meetings among the stakeholders, facilitated by an individual having significant municipal experience, and possessing excellent consensus building skills.
The process would begin with the identification of issues of concern related to communications and engagement, then examining potential approaches for improvement, and concluding by documenting the agreed changes and commitments for action moving forward.

In broad terms, the MOU would establish a new “Communications and Engagement” framework, and, in specific terms, it would also detail how matters of concern to the participants will be addressed and communicated in the future. While the final content of the MOU will be a result of consensus achieved by the stakeholders, below are some examples of matters which may be considered for inclusion in the MOU. These are just suggested ideas; however, it is important that the stakeholders ensure that the process is inclusive, and their MOU is designed to meet their unique organizational needs.

1. A Preamble confirming the participants:
   - are united in their desire to provide the best fire service possible, within available resources, to the residents of Bowen Island;
   - have agreed that their working relationships will be strengthened by documenting certain expectations and processes aimed at improving communications; and
   - have recognized the importance of documenting, for the purpose of clarity and future reference, their shared intentions and commitments.

2. Communications
   - The Fire Chief is the representative and spokesperson for the Department;
   - The Fire Chief will consult with the volunteers on matters of new policy, or significant organizational change, and present their views to other stakeholders;

3. Policy Development and New Initiatives
   - Council and Administration will not undertake major initiatives, or approve new policies, that may have implications for the Fire Department, without first consulting with, and seeking the involvement of the Fire Chief, and at his discretion, receiving input from representative(s) of the volunteers;
   - The Fire Chief, and volunteer members of the Department, will not undertake or agree to participate in major new initiatives, without advising and receiving the approval of the CAO, and if necessary, Council.

4. Stakeholder Meetings
   - Initially, the CAO will commit to meet weekly with the Fire Chief, if needed, until these parties determine a more infrequent meeting schedule is desired;
• The Fire Chief will attend at least one Council meeting per month to report or receive questions from Council, related to fire department matters, until a less frequent schedule is agreed to by the parties;

• On request of the Fire Chief, and with approval of the CAO, a representative(s) of the volunteers may also make representation to Council.

5. Budget Process and Financial Support

• The CAO and CFO will meet with the Fire Chief, to identify any concerns with the current process and policies including:
  
  o whether BIM administration receives sufficient financial information to prepare a budget submission and effectively support Department operations;

  o whether the current budget process provides sufficient time to complete the budget submission;

  o whether the Fire Chief needs any additional administrative or financial support to complete the budget submission or to effectively manage the Department operations;

  o whether the Fire Chief is satisfied with the current budget process in terms of making representation to Council or the Finance Committee; and

  o whether the Fire Chief is satisfied with the current process and level of engagement in any decisions to amend the proposed budget.

• The CAO and CFO will make recommendations to Council on proposed amendments to the budget process and financial support needed, to address the Fire Chief’s concerns, if any.

6. Fire Chief Recruitment and Selection

• The CAO will recommend to Council a process or approach to engage (or solicit input) from the volunteer members of the Department on the selection of a new Fire Chief. If this provision is agreed to by the stakeholders, it could be included in a revision to the 2018 Fire Department Personnel Policy.

7. MOU Review and Update

• Annually the Fire Chief and CAO will review and recommend updates to the MOU as deemed appropriate.
Stage Two

The second stage involves the development of a strategic plan for the Department. The strategic plan should include a framework and direction to guide the future evolution of the Department, as well as identifying and proposing actions to facilitate the proper integration of the Department into the municipal organization. With a commitment from the stakeholders, (confirmed in the MOU), a Working Group could be established to expedite development of the strategic plan. The Working Group could initially consist of the Mayor and a Councillor, the CAO and CFO, the Fire Chief, Deputy Fire Chief and one or more members of the Department. The strategic planning process would ideally be initiated with a workshop, led by an experienced facilitator, to assist in development of the first draft of the strategic plan, which will become a living document, to be reviewed periodically and updated as appropriate.

This planning and engagement process could achieve multiple objectives including:

- providing an opportunity and forum for the stakeholders to work cooperatively and collaborative to achieve their shared objective, namely, to provide the best fire service possible, within available resources, to the residents of BIM;
- creating a comprehensive vision and long-term plan for the evolution of the Department;
- ensuring the strategic plan for the Department supports and complements the broader strategic directions of BIM;
- identifying and addressing issues, if any, which should be completed from the dissolution transition process to further promote full integration of the Department into the municipal organization.

In broad terms, the strategic plan process should include:

- a review of the Service Statement and Service Profile (outlined in the 2012 Service Plan) and an update as necessary to develop a comprehensive set of mission, vision and value statements for the Department;
- a Strengths, Weaknesses, Opportunities and Threats analysis;
- an outline of Departmental expectations;
- a list identifying the Departments priorities as well as long-term goals and objectives.

The completed Fire Department Core Service Review could be used as the key reference document for developing the strategic plan as it has identified a series of issues requiring consideration or improvement, and made recommendations to address such issues. Consideration of each section of this review (with its recommendations) could help inform and expedite the planning process, and highlight key areas of concern, to form the basis of an action plan. From this information the stakeholders can:
• prioritize the projects and outline a critical path for each matter;
• develop a task list and timeline for completion;
• provide an estimate of potential costs (and sources of funding) and other resources required; and
• assign organizational responsibility for the completion of each task or project.

The Department was transitioned from the Fire Improvement District to the Municipality in 1999 and it is not clear that the transition was managed according to the requirements in the Letters Patent at that time.

Strategic planning is an important management tool for developing the shared vision, goals and objectives for the Department and the Municipality. The exercise should include all members of the Department, municipal staff and elected officials to ensure that the strategic plan meets the needs of all stakeholders.

**Recommendation:** BIM and the Department should develop a five-year strategic plan for fire protection services. The strategic plan should address current and emerging trends and be linked to the operating and capital budget process.
Fire Underwriters Survey

Introduction and Overview

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

The Department has undergone two Fire Underwriters’ reviews since BIM was incorporated: 2007 and 2013. In addition, the Fire Underwriters have been asked to provide advice on a range of issues, including apparatus requirements and the potential impact of new developments on the Municipality’s fire rating.

The 2013 review drew heavily on the one completed in 2007. Indeed, there was no separate assessment of the water supply conducted in the most recent review. The results were very favourable, although there are areas where the Department and BIM have to focus attention in order to maintain the qualifications obtained.

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

The primary purpose of the Fire Underwriters is to establish the Dwelling Protection Grade (“DPG”) and Public Fire Protection Classification (“PFPC”) for each community in the country. The DPG rating generally applies to single family detached residences, whereas the PFPC rating generally applies to multi-family properties.

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118 There is on-going consideration by the Fire Underwriters of the two types of classifications: it is possible that in the not-to-distant future, the two ratings will be combined so that only a single rating system exists, covering both residential and commercial/multi-family properties.

119 Under the FUS 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
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.120

Most residential homeowners and businesses carry fire and general perils insurance, and any person with a mortgage is required to maintain such insurance by the mortgagee bank or financial institution. Where a community has a fire department that meets FUS standards for performance, the cost of insurance can be significantly decreased. Thus, one of the cost-benefit analyses that underpins the investment required to establish or maintain an FUS-rated fire department is the trade-off between the taxes needed to pay for the department (and meet FUS standards) and the expected savings for residents and businesses on insurance costs.

With a well-rated fire department, the savings on insurance premiums often will offset, in whole or in significant part, the costs of operating the department. For an individual with a house that is assessed at a replacement cost121 for insurance purposes of $300,000, a “protected” or “semi-protected” rating will generally result in cost saving on insurance of more than $2,000. For commercial properties, significant reductions in insurance rates can be expected when the community obtains a PFPC rating of 7 or better. From the savings enjoyed on insurance, the tax cost of maintaining the service would then need to be deducted to determine the net direct financial benefit (or cost) of having a “rated” department.122

By way of example, the following tables are sometimes shown in FUS reviews.123 They show the amount by which “average” insurance costs drop for residential and commercial properties as the DPG or PFPC rating improves:

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122 It is important to emphasize that “replacement cost” and the “tax value” of a home are not interchangeable concepts. Replacement cost is driven by square footage and the cost of construction, while the tax value of a home is driven by market factors.

123 These tables are now several years old. Most of the more recent reports we have seen have not included them, or, where they have been included, have involved insurance cost figures which are particular to the locale. When created by FUS, these figures were calculated on broad-based national averages in the reports in which they were used.
Table 10: DPG Rating—Estimated Insurance Costs

<table>
<thead>
<tr>
<th>Replacement Value $</th>
<th>Unprotected Rate $</th>
<th>Semi Protected Rate $</th>
<th>Fully Protected Rate $</th>
</tr>
</thead>
<tbody>
<tr>
<td>100,000</td>
<td>1,165</td>
<td>465</td>
<td>315</td>
</tr>
<tr>
<td>125,000</td>
<td>1,470</td>
<td>585</td>
<td>400</td>
</tr>
<tr>
<td>150,000</td>
<td>1,750</td>
<td>700</td>
<td>475</td>
</tr>
<tr>
<td>175,000</td>
<td>2,040</td>
<td>815</td>
<td>555</td>
</tr>
<tr>
<td>200,000</td>
<td>2,710</td>
<td>1,215</td>
<td>739</td>
</tr>
<tr>
<td>250,000</td>
<td>3,290</td>
<td>1,475</td>
<td>893</td>
</tr>
<tr>
<td>300,000</td>
<td>3,880</td>
<td>1,741</td>
<td>1,053</td>
</tr>
<tr>
<td>350,000</td>
<td>4,422</td>
<td>1,987</td>
<td>1,201</td>
</tr>
<tr>
<td>400,000</td>
<td>4,953</td>
<td>2,226</td>
<td>1,349</td>
</tr>
<tr>
<td>450,000</td>
<td>5,489</td>
<td>2,465</td>
<td>1,491</td>
</tr>
</tbody>
</table>

Table 10 is out of date, in that insurance costs have climbed significantly since the table was produced (~2013). However, it is still useful in showing the material savings that result from having a semi- or fully-protected rating from the Fire Underwriters.

Table 11: PFPC Rating—Estimated Insurance Cost Decreases

<table>
<thead>
<tr>
<th>Public Fire Protection Classification</th>
<th>U-Rate Percentage Decreases</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFPC 10 to PFPC 9</td>
<td>99.2%</td>
</tr>
<tr>
<td>PFPC 9 to PFPC 8</td>
<td>96.6%</td>
</tr>
<tr>
<td>PFPC 8 to PFPC 7</td>
<td>82.4%</td>
</tr>
<tr>
<td>PFPC 7 to PFPC 6</td>
<td>74.4%</td>
</tr>
<tr>
<td>PFPC 6 to PFPC 5</td>
<td>63.1%</td>
</tr>
<tr>
<td>PFPC 5 to PFPC 4</td>
<td>53.8%</td>
</tr>
<tr>
<td>PFPC 4 to PFPC 3</td>
<td>48.0%</td>
</tr>
<tr>
<td>PFPC 3 to PFPC 2</td>
<td>47.3%</td>
</tr>
<tr>
<td>PFPC 2 to PFPC 1</td>
<td>45.8%</td>
</tr>
</tbody>
</table>

As can be seen in Table 11, ratings improvements in the commercial classification do not result in linear decreases. From a cost-benefit perspective, moving a rating from PFPC 8 down to ~PFPC 4 provides the optimal savings for businesses and multi-family properties. That non-linear relationship is worthy of consideration on a cost-benefit analysis between the amount required to be invested in improving the service and the expected insurance savings for owners.
of commercial, industrial and multi-family properties.\textsuperscript{124} Below PFPC 4, the amount of investment needed to obtain the improved rating likely will outweigh any insurance savings.

A complicating factor is that the ratings applied to a community are not necessarily uniform. FUS considers a series of issues (examined further below), which include distance from the fire hall and availability of water supplies. Depending on the size and nature of the service area, the insurance benefits may not be equally enjoyed by all ratepayers. Thus, if the fire zone is larger than eight kilometres by road network (assuming the hall in the centre), the residents outside of the eight-kilometre zone may not enjoy the cost savings received by those residents who live within the zone.

**FUS Methodology**

**Overall Ratings Weighting**

The FUS ratings are weighted against the following four areas of assessment:\textsuperscript{125}

- Fire Department: 40%
- Water Supply: 30%
- Fire Safety Control: 20%
- Fire Service Communications: 10%.

The assessment also involves a consideration of the principal fire risks covered by the subject department, including determination of the required fire flows (i.e., water flow requirements for the particular hazards and risks) and the “basic fire flow” (“BFF”). The BFF, which for Bowen Island has been set at 2,900 IGPM,\textsuperscript{126} is used by the Fire Underwriters to set the minimum number of apparatus required, the required staffing and, as a necessary corollary, how much hose and equipment a department requires. It also impacts whether a department requires an aerial apparatus.

The fire department assessment includes a consideration of apparatus, equipment, staffing, training, operations and administration, as well as the location/distribution of fire halls and fire companies. In this segment of its review, FUS analyzes the fire department’s ability to extinguish fires in all parts of its fire protection area. More recent (post-2013) reviews have 19 separate factors which are assessed in this category.

Part of the fire department assessment includes a review of the apparatus in use and its suitability for the subject department’s fire risks. In general, FUS sets 20 years as the maximum

\textsuperscript{124} The amount of savings can also vary with the particular type of industry or commercial undertaking. See the more detailed discussion of PFPC ratings below. The table gives the average of all savings, across all industry types.

\textsuperscript{125} This information is based on various FUS reviews we have examined in work for other clients.

\textsuperscript{126} Imperial Gallons per Minute. 2013 Report, p. 25.
age for front-line use of apparatus by small to medium-sized communities (and recommends front-line use be limited to 15 years). It also has requirements for certain apparatus types (e.g., aerial devices) depending on its assessment of the community’s fire risks, and an aggregate pumping requirement based on the BFF calculation. The age of apparatus can be extended (generally to 25 years), but only by application to FUS and by meeting annual certification requirements.

The “Water Supply” section looks at the hydrant system (if present), and considers issues such as water flow, supply reliability and system redundancy, based on criteria set out in its “Water Supply for Public Fire Protection”. There are 15 factors which are assessed in this category. Where no hydrant system is present or where the hydrant system only covers a portion of the fire protection area, FUS then looks at the ability of the fire department to access, load, transport and unload water against the risks faced in the non-hydrant protected area. In such cases, the assessment is usually considered as part of the “Fire Department” analysis.

The “Fire Safety Control” category covers fire prevention programs/public education, fire inspections and building/fire code and bylaw enforcement. There are four factors which are assessed within this category. In general, FUS is looking at whether local government is making effective use of these tools in managing the level of fire risk throughout the fire protection area (e.g., inspections, code enforcement, fire prevention programs, smoke alarm programs, etc.).

The “Fire Service Communications” category involves an assessment of dispatch services, paging systems and radio communications. Seven factors are assessed within this category, including the communications centre, dispatching and paging processes, and radio communications.

Ratings System

As noted above, FUS reviews involve two entirely separate rating systems – one for residential properties (DPG) and one for commercial/multi-family properties (PFPC). The DPG rating is calculated on a five-point numerical scale, whereas the PFPC rating is based on a 10-point scale. In both cases, a “1” is the highest achievable rating. In simplest terms, the goal of an FUS review is to provide insurance companies with a grading of fire protection services provided within a particular fire protection area.

Insurance companies use the grading provided by the Fire Underwriters as one of a number of factors in determining local fire protection insurance rates. It should be emphasized that the system is quite fluid, and individual insurers can and will set rates based on considerations other

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127 FUS recommends an aerial device once a community has a water flow requirement that is calculated to exceed 3,300 Imperial gallons per minute or where there are five or more buildings in the community which exceed 3 stories (10.7 metres) in height.

than the FUS ratings (either higher or lower, depending on the insurer’s perception of actual risk, competitive concerns and other factors).\textsuperscript{129} It is the responsibility of individual insurance companies to determine what weight they give the FUS grading when determining insurance rates.

**DPG Rating**

For residential properties, the rating system is graded on a scale from 1 – 5 where “1” is best possible rating. The rating of “3” is split into two subcategories where “3A” indicates that there is an approved hydrant or water supply system, and “3B” indicates that the department relies on mobile water supplies. From the insurance industry’s perspective, the ratings for residential homeowners are generally treated as follows:

*Table 12: DPG Rating Details*

<table>
<thead>
<tr>
<th>DPG Rating</th>
<th>Insurance Status</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Unprotected</td>
<td>No savings on insurance from having a fire department.</td>
</tr>
<tr>
<td>4</td>
<td>Semi-protected</td>
<td>Some savings on insurance likely will be enjoyed; in some regions, this rating and “3B” are treated as essentially equivalent.</td>
</tr>
<tr>
<td>3B</td>
<td>Semi-protected</td>
<td>This is usually the rating level at which significant cost savings on insurance are enjoyed. This is usually the highest rating available in areas which are not hydrant-protected.</td>
</tr>
<tr>
<td>3A; 3B(S)\textsuperscript{130}</td>
<td>Protected</td>
<td>Progressively greater savings on insurance. Fully protected status typically means a savings of 50-60+% on insurance costs.</td>
</tr>
<tr>
<td>2</td>
<td>Protected</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Protected</td>
<td></td>
</tr>
</tbody>
</table>

In general, FUS estimates that a community which achieves fully protected status can enjoy savings on insurance of up to 60% (or more) versus communities which are “unprotected”.\textsuperscript{131} By way of example, in a recent fire master plan we worked on, two of the members of council to whom we delivered the report exemplified the difference that the FUS rating makes. In that


\textsuperscript{130} A rating of 3B(s) is an FUS accreditation for tanker shuttle capability, where a department is able to demonstrate its ability to maintain a specified water flow for a stipulated period of time, using tanker units. It applies to areas which are not hydrant-protected, and must be periodically renewed. This specialty rating is treated by most insurers as being the equivalent of a “DPG 3A” (fully protected) rating.

\textsuperscript{131} This estimate is based on statements in various reviews conducted by the FUS, including for the Kootenay Boundary Regional Fire Service (2008) and the Sasamat Volunteer Fire Department (2010).
instance, the fire department’s coverage zone was greater than eight kilometres, so residents outside of the eight-kilometre zone did not receive the benefit of a reduced insurance rate. One councillor was paying more than $3000 annually for fire insurance, while the other was paying less than $1000 – in relation to properties that the two agreed were otherwise broadly similar.132

There are some fundamental location and distance requirements for an area to receive a protected or semi-protected rating:

- residents must live within eight kilometres by road of a fire hall (i.e., the measurement is based on distance travelled on the existing road network, not in a straight line from the fire hall); and

- for hydrant protected areas, the residence must be within 300 metres of a fire hydrant (or else the residence is classed based on the community’s “non-hydrant protected” rating).133

Properties which are more than eight kilometres by road from a fire hall are treated as DPG 5 (unprotected). With the addition of Hall 2, the number of residential properties which are outside of the eight-kilometre limit has been greatly reduced. The proposed location for new Hall 1 will mean that essentially all existing residential structures will be within eight kilometres of a fire hall.

PFPC Rating

The PFPC rating, which is determined at the same time as the DPG rating, is based on the four fundamental factors identified above. The impact of an improved classification varies with the industry – higher risk industries enjoy greater savings at certain levels – for example, as the PFPC rating improves from 8 to 7.134 In the context of other work we have undertaken, we have reviewed information from FUS which suggests that for each level of improvement in the PFPC classification, the average commercial insurance cost for a typical area will drop by approximately 4 – 15%, depending on which level of the scale one is on (see the chart above).

The following factors are integrated into the PFPC assessment: 135

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132 The example also illustrates a problem where the financial benefits of having a fire department are not always equally enjoyed by all taxpayers.

133 This distance can be extended to 600 metres if a department is certified by FUS as capable of “large diameter hose-lay”. See: FUS, Accreditation of Alternate Water Supplies for Public Fire Protection (2012), at: https://fireunderwriters.ca/media/638e8d5d-e4b5-4d63-8586-c41cd7307660/SePhYQ/FUS/Resources/FUS-AlternativeWaterSupplyAccreditationProtocol2012.pdf accessed on 20 January 2020.

134 Based on other FUS reviews, where for one department’s area, industry classified as “Manufacturing (Wood)”, showed a 17% insurance cost saving when moving from a PFPC 8 to PFPC 7, which contrasted with only 3 – 4% savings enjoyed by less risky undertakings.

1. Fire Risk including analysis of required fire flows (i.e., the amount of water a department needs to be able to put on a fire) for individual buildings, building groups and zones of similar risk (Fire Flow Demand Zones) of the community. From this fire risk assessment, the Fire Underwriters determine the area’s BFF requirement, which is the amount of water that FUS determines the particular department must be able to pump to meet the majority of risks within its service area. The BFF is a critical calculation: it drives a number of the other assessment factors, including apparatus requirements, response levels, staffing and other equipment;

2. Fire Department including apparatus, equipment, staffing, training, operations and geographic distribution of fire companies;

3. Water Supply system including source to distribution analysis, redundancy factors, condition and maintenance of various components, and storage volume;

4. Fire Prevention and Fire Safety Control programs including public education, codes/bylaws implementation and use of codes/bylaws in managing the level of fire risk throughout communities; and

5. Emergency Communication systems including telephone systems, telephone lines, staffing, and dispatching systems.

The PFPC rating is essentially a benchmarking against various standards or requirements in each category and in relation to other communities.

For a commercial property, the application of the rating system depends on the distance from the fire hall and, in hydrant protected areas, distance from a fire hydrant. This can result in “split ratings” for a fire protection area. The FUS website used to include a description of split ratings as follows: 136

"In many communities, FUS develops a split classification (for example, 5/9). Generally, the first class, (Class 5 in the example) applies to properties insured under Commercial Lines within five road kilometres of a fire station and within 150 metres of a fire hydrant. The second class (Class 9 in the example) applies to properties insured under Commercial Lines within five road kilometres of a fire station but beyond 150 metres of a hydrant. FUS assigns Class 10 to properties insured under Commercial Lines that are located beyond five road kilometres from the responding fire station."

It should be noted that newer FUS reviews, in addition to introducing more detailed ratings and some new concepts,137 are increasingly focusing on fire prevention, fire education and the

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136 The FUS website has been reorganized and this particular language is no longer found, although the concept is still applied.

137 Some of the concepts introduced over the past several years include a “divergence penalty” – where either the water supply system or the fire department is markedly better than the other, the overall score will be reduced – and a general penalty for “special hazards analysis”, which seems to be a largely
importance of bylaws which support good fire protection practices (e.g., sprinklering requirements, a well-considered fire inspection program, building and electrical code enforcement, etc.).

**Current FUS Rating for the Department**

The Department’s 2013 commercial fire rating (PFPC) was very favourable: for commercial buildings within five kilometres of a firehall, in an area where there are hydrants and an approved water system, the rating went from PFPC 8 to PFPC 5. In addition, certain residential properties received either a semi- or fully-protected rating as a result of the construction of Hall 2. It should be noted that the array of different water systems leads to different ratings for various parts of the Island. The 2007 and 2013 Reports identified 16 different water systems, 10 of which were assessed in 2007, of which only six were recognized as providing sufficient flow and reserves to meet FUS standards.138

For residential properties without an approved water supply (regardless whether there are hydrants), it means that they drop from a “DPG 3A” rating (fully protected) to “DPG 3B” rating (semi-protected), provided that they are within eight kilometres of a fire hall. The Department’s calculated coverage area (so, eight kilometres by road for residential properties and five kilometres by road for commercial/multi-family properties), appears to have been expanded by the construction of Hall 2, meaning that areas which were treated as unprotected in 2007 were treated as ratable and either assessed as fully or semi-protected in 2013.

*Table 13: FUS Ratings*139

The following grades have been calculated for Bowen Island Municipality in 2013. The Municipality has improved from PFPC 8 to PFPC 5.

<table>
<thead>
<tr>
<th>SUB DISTRICT(S)</th>
<th>PPFC previous</th>
<th>PFPC 2013</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowen Island - F.S.#1 – Core Bay Water System HPA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>5</td>
<td>Hydrant Protected – Commercial Lines insured properties within specified distances of a hydrant on the Core Bay water system and within 5 road km of Bowen Island – F.S.#1 and F.S.#2</td>
</tr>
<tr>
<td>Bowen Island - F.S.#1</td>
<td>9</td>
<td>9</td>
<td>Fire Hall Protected – Commercial Lines insured properties not within specified distances of a hydrant on the Core Bay water system but within 5 road km of Bowen Island – F.S.#1 and F.S.#2</td>
</tr>
<tr>
<td>Areas beyond 5km road response distance</td>
<td>10</td>
<td>10</td>
<td>Unprotected – Commercial Lines insured properties not within 5 road km of Bowen Island – F.S.#1 and F.S.#2</td>
</tr>
</tbody>
</table>

subjective assessment of risks from natural or environmental factors (e.g., earthquake, wildfire and weather).


139 Ratings that have been calculated by the Fire Underwriters, as shown in the 2013 Report at pp. 52 – 53.
It should be noted that, in relation to the residential DPG rating, a DPG 3A rating is generally the best that the Fire Underwriters will give to a volunteer or paid-on-call department where hydrants are available. Where there are no hydrants, a DPG 3B rating is generally the best that can be obtained, unless a department qualifies for water shuttle accreditation, which is a testing process to determine a department’s ability to shuttle water and maintain a consistent water flow for a set period of time. If shuttle accreditation is obtained, a DPG 3B(s) rating is given, which is generally treated as the same as a DPG 3A rating (i.e., fully protected).

We have conducted a detailed review of the 2013 Report and the Department’s scoring by the Fire Underwriters. Two matters stand out as requiring immediate attention:

- First, the protected and/or semi-protected ratings extended to certain properties on the south and south-west end of the Island, including the areas around King Edward Bay, and the region from Trinity Bay to Fairweather Bay, are dependent on a response being provided out of Hall 2. Absent such a response, the properties are beyond the eight-kilometre limit required by the Fire Underwriters from Hall 1. We note that the Department has now implemented a plan to provide responses out of Hall 2.
• Second, there was some confusion in the 2013 Report about whether or not the Department is conducting fire safety inspections as required under the Fire Services Act. Our understanding is that such inspections are not being conducted and have never been undertaken by BIM. To ensure that the score in the “Fire Safety Control” section of the 2013 Report can be maintained, it is essential that an inspection program be developed and implemented.

Summary

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

Background

The Department responds from two fire halls and attends a rising number of emergency and non-emergency events. The data source for this analysis is the Surrey Fire Department, which is the Department’s dispatch provider. Response data has been provided for the period 1 January 2013 to 31 December 2019.

Responses by Year

Responses by year are detailed in Table 14 and suggests a fairly consistent increase over the period, with the total number of calls rising some 24% during this period.

Table 14: BIFD Responses 2013-2019

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>154</td>
</tr>
<tr>
<td>2014</td>
<td>156</td>
</tr>
<tr>
<td>2015</td>
<td>170</td>
</tr>
<tr>
<td>2016</td>
<td>180</td>
</tr>
<tr>
<td>2017</td>
<td>181</td>
</tr>
<tr>
<td>2018</td>
<td>176</td>
</tr>
<tr>
<td>2019</td>
<td>191</td>
</tr>
</tbody>
</table>

Viewed as a graph (Figure 7) the trend line is increasing and based on a 10-year mathematical projection the Department could expect to be responding to some 246 events annually by 2029.
Responses by Month

Responses by month are shown in Figure 8 and this illustrates the busiest months are July and August along with September. By comparison February, March and June are approximately 66% of the peak months.
Responses by Day of the Week

Responses by day of the week show a significant peak on weekends (Figure 9) with Saturday and Sunday having an event volume about 50% higher than midweek.

![Responses by Day of the Week, 2013-19](image)

*Figure 9: Responses by Day of the Week*

Response by Hour of the Day

Responses by hour of the day show the largest variance with the busiest hour (between 6 pm and 7 pm) more than 400% busier than the lowest volume hours (3 am to 5 am)

![Responses by Hour, 2013 - 19](image)

*Figure 10: Responses by Hour of the Day*
Summary by Day and by Hour

The data in Table 15 shows the total number of responses by day of the week and by hour of the day for all responses in the 2013 – 2019 period. This table illustrates the variability of the Department’s response patterns.

Table 15: Total Number of Responses by Day of the Week and Hour of the Day

| Day/Hour | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | Total |
|----------|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| Sun      | 8 | 6 | 6 | 5 | 2 | 3 | 7 | 4 | 3 | 7 | 10 | 11 | 8 | 8 | 9 | 13 | 13 | 18 | 22 | 15 | 7 | 8 | 6 | 6 | 205 |
| Mon      | 6 | 4 | 5 | 2 | 2 | 1 | 3 | 10 | 5 | 16 | 16 | 4 | 6 | 6 | 8 | 14 | 8 | 8 | 7 | 12 | 12 | 8 | 4 | 1 | 168 |
| Tue      | 4 | 5 | 4 | 1 | 1 | 3 | 2 | 5 | 7 | 5 | 5 | 8 | 12 | 13 | 5 | 13 | 6 | 11 | 9 | 4 | 4 | 8 | 5 | 3 | 143 |
| Wed      | 5 | 4 | 3 | 3 | 4 | 5 | 6 | 7 | 3 | 8 | 9 | 6 | 8 | 8 | 10 | 12 | 7 | 12 | 9 | 6 | 5 | 2 | 142 |
| Thu      | 3 | 4 | 6 | 5 | 1 | 4 | 2 | 6 | 8 | 8 | 6 | 14 | 11 | 10 | 6 | 11 | 7 | 10 | 9 | 7 | 12 | 6 | 7 | 163 |
| Fri      | 3 | 4 | 2 | 3 | 3 | 4 | 6 | 10 | 8 | 6 | 8 | 7 | 8 | 10 | 6 | 9 | 9 | 15 | 9 | 14 | 8 | 4 | 168 |
| Sat      | 7 | 7 | 2 | 3 | 6 | 6 | 2 | 4 | 3 | 12 | 11 | 11 | 9 | 12 | 12 | 13 | 14 | 18 | 16 | 12 | 13 | 8 | 7 | 219 |
| Total    | 36 | 34 | 28 | 14 | 22 | 17 | 26 | 36 | 40 | 63 | 59 | 56 | 67 | 61 | 62 | 72 | 70 | 79 | 82 | 83 | 60 | 69 | 42 | 30 | 1208 |

From this we can see that the busiest hours over the seven-year period are the ‘dinner hour,’ with 5:00 pm to 7:00 pm being the busiest and peaking on Saturday and Sunday. Event volume is lowest after midnight with three of the hour time frames having no response of any kind. Also, looking at the time from around 9:00 am, Monday is much busier than the next four days.

This Department’s call demands are complex, with the busiest times more than 20 times higher than the slowest times which had events in them. Somewhat unusual is that the Department’s peak volume is on the weekend (as opposed to mid-morning to mid-afternoon on weekdays), which is probably reflective of the seasonal and weekend visitors to the Island.
Summary by Month and Year

In a similar way, variance by year and month is significant as shown in Table 16.

From this we can see that July, August and September are the busiest months considering all seven years, with a peak of 25 events, however the busiest single month was December 2016 which had 27 events. Again, the seasonal variations are likely driven by a surge in visitors during the summer months.

**Table 16: Response by Month and Year**

<table>
<thead>
<tr>
<th>Year/Month</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>14</td>
<td>5</td>
<td>7</td>
<td>12</td>
<td>11</td>
<td>11</td>
<td>21</td>
<td>23</td>
<td>17</td>
<td>10</td>
<td>8</td>
<td>15</td>
<td>154</td>
</tr>
<tr>
<td>2014</td>
<td>7</td>
<td>11</td>
<td>11</td>
<td>13</td>
<td>10</td>
<td>13</td>
<td>18</td>
<td>18</td>
<td>17</td>
<td>10</td>
<td>17</td>
<td></td>
<td>156</td>
</tr>
<tr>
<td>2015</td>
<td>7</td>
<td>10</td>
<td>13</td>
<td>14</td>
<td>8</td>
<td>21</td>
<td>16</td>
<td>15</td>
<td>23</td>
<td>15</td>
<td>14</td>
<td>14</td>
<td>170</td>
</tr>
<tr>
<td>2016</td>
<td>17</td>
<td>16</td>
<td>12</td>
<td>9</td>
<td>11</td>
<td>7</td>
<td>19</td>
<td>17</td>
<td>11</td>
<td>16</td>
<td>18</td>
<td>27</td>
<td>180</td>
</tr>
<tr>
<td>2017</td>
<td>20</td>
<td>11</td>
<td>10</td>
<td>16</td>
<td>10</td>
<td>9</td>
<td>17</td>
<td>16</td>
<td>17</td>
<td>17</td>
<td>25</td>
<td>13</td>
<td>181</td>
</tr>
<tr>
<td>2018</td>
<td>13</td>
<td>11</td>
<td>9</td>
<td>12</td>
<td>11</td>
<td>22</td>
<td>18</td>
<td>16</td>
<td>23</td>
<td>12</td>
<td>16</td>
<td>13</td>
<td>176</td>
</tr>
<tr>
<td>2019</td>
<td>10</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>25</td>
<td>18</td>
<td>12</td>
<td>13</td>
<td>19</td>
<td>7</td>
<td>191</td>
</tr>
<tr>
<td>Total</td>
<td>88</td>
<td>80</td>
<td>79</td>
<td>92</td>
<td>82</td>
<td>98</td>
<td>129</td>
<td>123</td>
<td>121</td>
<td>100</td>
<td>110</td>
<td>106</td>
<td>1208</td>
</tr>
</tbody>
</table>

Variation by Event Type

The BIFD responds to a wide range of event types; these are summarized in Table 17 and it shows that First Medical Responder (“FMR”) generates the highest number of responses. This distribution of event types is similar to many of the other fire departments which the Consultants have reviewed. For the BIFD, like most fire departments, the number of reported structure fires is less as a percentage of the total events. However, what distinguishes structure fires is the requirement for fire departments the size of the BIFD to commit all of their resources where most other event types require only one or two staffed units.
Table 17: Responses by Event Type

<table>
<thead>
<tr>
<th>General Event Type/Year</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>Total</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>FMR</td>
<td>102</td>
<td>93</td>
<td>96</td>
<td>100</td>
<td>92</td>
<td>90</td>
<td>99</td>
<td>672</td>
<td>55.63</td>
</tr>
<tr>
<td>Alarms</td>
<td>11</td>
<td>14</td>
<td>12</td>
<td>12</td>
<td>13</td>
<td>17</td>
<td>16</td>
<td>95</td>
<td>7.86</td>
</tr>
<tr>
<td>Wires</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>21</td>
<td>19</td>
<td>12</td>
<td>7</td>
<td>80</td>
<td>6.62</td>
</tr>
<tr>
<td>Burning Complaint</td>
<td>2</td>
<td>5</td>
<td>10</td>
<td>7</td>
<td>10</td>
<td>11</td>
<td>15</td>
<td>60</td>
<td>4.97</td>
</tr>
<tr>
<td>MVA</td>
<td>6</td>
<td>11</td>
<td>10</td>
<td>4</td>
<td>9</td>
<td>11</td>
<td>7</td>
<td>58</td>
<td>4.80</td>
</tr>
<tr>
<td>Structure Fire</td>
<td>10</td>
<td>3</td>
<td>6</td>
<td>10</td>
<td>6</td>
<td>4</td>
<td>6</td>
<td>45</td>
<td>3.73</td>
</tr>
<tr>
<td>Investigation</td>
<td>2</td>
<td>7</td>
<td>3</td>
<td>3</td>
<td>10</td>
<td>11</td>
<td>36</td>
<td>3.73</td>
<td></td>
</tr>
<tr>
<td>Assist</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>8</td>
<td>30</td>
<td>2.48</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>7</td>
<td>2</td>
<td>6</td>
<td>7</td>
<td>3</td>
<td>3</td>
<td>29</td>
<td>2.40</td>
</tr>
<tr>
<td>Bush/Grass Fire</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>7</td>
<td>6</td>
<td>27</td>
<td>2.24</td>
</tr>
<tr>
<td>Hydro Pole Fire</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>6</td>
<td>21</td>
<td>55</td>
<td>4.58</td>
</tr>
<tr>
<td>Chimney Fire</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>15</td>
<td>1.24</td>
<td></td>
</tr>
<tr>
<td>Electrical Fire</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>8</td>
<td>0.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle Fire</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>0.58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO Alarm</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>6</td>
<td>0.50</td>
<td></td>
</tr>
<tr>
<td>Rescue</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>0.41</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas/Diesel spill</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>0.33</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boat/Marina Fire</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>0.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post Fire Inspection</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0.17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hazmat</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0.17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explosion</td>
<td>1</td>
<td>1</td>
<td>0.08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>1</td>
<td>1</td>
<td>0.08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forest Interface</td>
<td>1</td>
<td>1</td>
<td>0.08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grand Total</td>
<td>154</td>
<td>156</td>
<td>170</td>
<td>180</td>
<td>181</td>
<td>176</td>
<td>191</td>
<td>1,208</td>
<td>100.00</td>
</tr>
</tbody>
</table>
Variation by Source

Responses for the Department originate from a number of sources as shown in Table 18. The highest number of these is from the BC Emergency Health Services (the “BCEHS”) and this is consistent with FMR being the most frequent event type responded to. Responses generated from the public are in two categories, “9-1-1 Caller” and “Public” with the former almost always generating an emergency response, while the latter is likely a non-emergency call type such as burning complaints, and other requests for assistance.

Table 18: Source of Requests for Response, 2013-2019

<table>
<thead>
<tr>
<th>Source</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambulance</td>
<td>716</td>
</tr>
<tr>
<td>9-1-1 Caller</td>
<td>340</td>
</tr>
<tr>
<td>Alarm Company</td>
<td>74</td>
</tr>
<tr>
<td>Public</td>
<td>50</td>
</tr>
<tr>
<td>RCMP</td>
<td>12</td>
</tr>
<tr>
<td>Fire Chief</td>
<td>9</td>
</tr>
<tr>
<td>Coastal Fire</td>
<td>4</td>
</tr>
<tr>
<td>BI Engine</td>
<td>2</td>
</tr>
<tr>
<td>BI Fire Dept</td>
<td>1</td>
</tr>
<tr>
<td>Grand Total</td>
<td>1,208</td>
</tr>
</tbody>
</table>

Figure 11: Source of Requests for Response, 2013-2019 [note that 0% shown is a result of rounding]
Response by Unit Type

The BIFD responds with seven units, not including trailers. These units are listed in Table 19 with the total number of incidents responded to as well as the percentage over the period. In Capital Budget section, recommendations are made in terms of the fleet and include consideration of the requirements of the FUS.

Issues to be considered will be the appropriate mix of apparatus going forward and include recommendations about the number of Engines including Mini-Pumpers, Rescues, Tender's and possibly a Ladder unit.

Table 19: Total Responses by Bowen Island Apparatus 2013 to 2019

<table>
<thead>
<tr>
<th>Unit</th>
<th>Hall #</th>
<th>Responses</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI Rescue 30</td>
<td>Hall 1</td>
<td>1,120</td>
<td>43.19</td>
</tr>
<tr>
<td>BI Duty Chief</td>
<td>Hall 1</td>
<td>892</td>
<td>34.40</td>
</tr>
<tr>
<td>BI Engine 30</td>
<td>Hall 1</td>
<td>466</td>
<td>17.97</td>
</tr>
<tr>
<td>BI Engine 31</td>
<td>Hall 1</td>
<td>66</td>
<td>2.55</td>
</tr>
<tr>
<td>BI Engine 32</td>
<td>Hall 1</td>
<td>34</td>
<td>1.31</td>
</tr>
<tr>
<td>BI Rescue 31</td>
<td>Hall 2</td>
<td>10</td>
<td>0.39</td>
</tr>
<tr>
<td>BI Tender 30</td>
<td>Hall 2</td>
<td>5</td>
<td>0.19</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>2,564</td>
<td>100.00</td>
</tr>
</tbody>
</table>

There is a clear requirement for one or more Tenders on Bowen Island to provide a water supply in areas without hydrants or where hydrant pressure may be reduced. The Department does have a Tender which is kept at Hall 2 and is infrequently utilized. Although Tender 30 is a very capable unit with a considerable water capacity, since it is a tandem axle unit with a longer wheelbase, its use presents challenges operating on some of the Island’s narrow, curving roads, many of which have very steep grades and limited room for maneuver.

Table 20 lists the events to which it has responded, which to the end of 2019, has been a total of only five times: three responses were for a reported structure fire; one response was for a chimney fire; and one response was for a vehicle fire. This usage will be reviewed in detail with the Fire Chief and one option may be to procure a second tender, perhaps a single axle and thus a somewhat lighter and more maneuverable unit. In addition, with two tenders, the Department could consider obtaining a Superior Tanker Shuttle Accreditation from the Fire

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140 The term Tender is a generic description in the BC Fire Service for a vehicle which has its principle purpose to carry firefighting water to the scene. The Department uses the unit designation for Tanker for their water tender and the terms are interchangeable.
Underwriters, which potentially would improve the ratings for residences which currently lack a qualified water supply.

*Table 20: Total Responses by Bowen Tender 30, 2013 to 2019*

<table>
<thead>
<tr>
<th>Year, Incident Type, Location</th>
<th>Total Incidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td></td>
</tr>
<tr>
<td>STRUCTURE FIRE - RESIDENTIAL</td>
<td>1</td>
</tr>
<tr>
<td>Whitesails Dr, Bowen Island</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td></td>
</tr>
<tr>
<td>STRUCTURE FIRE - RESIDENTIAL</td>
<td>1</td>
</tr>
<tr>
<td>Dorman Rd, Bowen Island</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td></td>
</tr>
<tr>
<td>CHIMNEY FIRE</td>
<td>1</td>
</tr>
<tr>
<td>Charlie's Lane, Bowen Island</td>
<td></td>
</tr>
<tr>
<td>STRUCTURE FIRE - RESIDENTIAL</td>
<td>1</td>
</tr>
<tr>
<td>Eagle Cliff Rd, Bowen Island</td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td></td>
</tr>
<tr>
<td>VEHICLE FIRE - CAR/TRK/MC/LNMW</td>
<td>1</td>
</tr>
<tr>
<td>Lighthouse Lane, Bowen Island</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
</tr>
</tbody>
</table>

**Fire Hall Locations**

The BIFD operates from two fire halls, shown in Figure 12. Hall 1 is the main fire hall and is located at 788 Grafton Road; Hall 2 is the recently constructed auxiliary hall located at 1421 Adams Road. At the beginning of this Review, most of the apparatus was stationed at Hall 1 and all of the volunteers respond to this location for deployment. Hall 2 housed only the Tender and some smaller apparatus. The Fire Chief, after discussions with Consultants, BIM and the Department members, has since implemented a two-hall response, which is necessary to ensure proper coverage to the south part of Bowen Island.

**Hall 1**

Hall 1 was constructed at the current location following approval by the Improvement District in 1969. It was originally built with two apparatus bays but was expanded to four bays in 1977.
The second fire hall on Adams Road was constructed in 2011 and now houses both the Tender and an Engine. Hall 2 also functions as the EOC for BIM.

Response requirements for the BIFD are driven, in part, by the travel distance requirements established by the Fire Underwriters. The stated position of the FUS is that a single-family residence may be considered protected if it is within eight kilometres by road network of an accredited fire hall, while a multi-family residence or a commercial property must be within five kilometres.

The five and eight kilometre coverage from the existing Hall 1 is shown in Figure 13 and from this it can been seen that much of the Island is within the travel distance required by the Fire Underwriters. There are, however, a number of areas outside of this coverage zone, including the Blue Water, King Edward Bay and Windjammer Road area to the west as well as Arbutus Bay and Trinity Bay to the south.
Figure 13: 5 Km (light purple) and 8 Km (dark purple) coverage by road network from Hall 1

The areas not fully covered are shown in greater detail in Figure 14 and Figure 15.
Figure 14: Detail of the areas beyond eight kilometres from Hall 1, south of Hall 2

Figure 15: Detail of the areas beyond eight kilometres from Hall 1, north-west of Hall 2
Hall 2

Hall 2 was constructed in 2011 to address the coverage deficit noted above and the five- and eight-kilometre coverage from this hall is shown in Figure 16. Construction of this fire hall provided acceptable coverage for the southern portion of the Island as well as providing an EOC and additional storage space for apparatus.

![Figure 16: 5 Km (light purple) and 8 Km (dark purple) coverage by road network from Hall 2](image-url)
Proposed Fire Hall Location

Hall 1: New Location

The BIFD is planning to relocate Hall 1 to a location on Miller Road that will be adjacent to the RCMP and BCEHS. This new location would accommodate a larger post-disaster fire hall that would provide improved service to the Snug Cove area as well as to the north part of the Island. The new location is shown Figure 17 along with the five- and eight-kilometre response polygons.

Figure 17: 5 Km (light purple) and 8 Km (dark purple) coverage by road network from the proposed new Hall 1

As compared with the current location, there would be a much larger response deficit on the south side of the Island, one which is addressed by providing a response out of Hall 2.

The deficit areas from the relocated Hall 1 are shown in Figure 18, Figure 19, and Figure 20 and for each of these areas, the unprotected area in the south and west portion of Bowen Island is increased quite substantially.
Figure 18: Limit of the 8 Km coverage on the south end of the Island from the proposed new Hall 1.

Figure 19: Limit of the 8 Km coverage on the south-west corner of the Island from the proposed new Hall 1.
Figure 20: Limit of the 8 Km coverage on the west side of the Island from the proposed new Hall 1.
Hall 2

Hall 2’s coverage zone relative to the proposed, new Hall 1, is shown in Figure 21, and the coverage map shows that it is well located to provide protection to all properties on the south side of the Island.

![Figure 21: 5 Km (light purple) and 8 Km (dark purple) coverage by road network from the existing Hall 2](image)

Response Options

As noted above, since the beginning of this review, the Fire Chief has implemented a two-hall response to ensure proper coverage in the southern part of the Island. This is the preferred approach, one made even more critical once Hall 1 is moved to the new Miller Road location.

Figure 22 shows the home locations of the current volunteers relative to the existing Hall 1 (red icon), Hall 2 and the proposed new Hall 1.
Figure 22: Home location (blue pins) of the current volunteer firefighters. Red icon shows the location of the current fire hall 1 which is to be relocated to Miller Road.

For responses in the south-west portion of the Island, service times have been improved now that at least part of the response capability comes from the current Hall 2. Figure 23 shows the location of all fires initially reported as structure fires\textsuperscript{141} from 2013 and for nine of these in the south-west portion of the Island, the initial deployment and arrival is significantly improved with response from Hall 2.

\textsuperscript{141} Note that upon arrival a number of these turned out to be more minor in nature however the initial deployment for a fire reported in a structure requires a full response by the Department.
Deployment from Hall 2 also requires consideration of the storage of PPE at both locations and may require the acquisition of some additional reserve PPE sets. However, this is an issue that is being dealt with by the Fire Chief.

**Recommendation:** The Department should review and track its new deployment model from Hall 2 and make such refinements as are required to meet its deployment needs and any issues that may surface from having a portion of its members now respond from that Hall.
Wildfire Protection Plan

The Department is Bowen Island’s first line of response in the event of a wildfire or interface fire breaking out. The 2007 Community Wildfire Protection Plan was developed by Bruce Blackwell & Associates (the “Plan”) and submitted to the Department’s Fire Chief. At the time of the analysis, the Plan noted that the Island experienced an average of 24 fires in the interface every decade – more than two per year. Most of these fires had been inconsequential, though there were significant risks that needed to be addressed.\footnote{142}

Probability and Consequence

The Plan included a map balancing probability and consequence, which for convenience, is reproduced in Figure 24.\footnote{143}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figures/prob_consequence.png}
\caption{Probability vs. Consequence}
\end{figure}

The areas with the highest probability and consequence are distributed and are found in the Cove area as well as the south portion of the Island and Mount Gardner. Each of these areas presents particular challenges in terms of response. The Department has factored these issues

\footnote{142 Community Wildfire Protection Plan, by Bruce Blackwell and Associates 2007, page 11.}
\footnote{143 Ibid., page 18.}
into its planning for potential responses. At the same time, it is noted that the Plan is now some 13 years old, and it may be prudent to reassess the risk levels, particularly as the Island has seen some significant development in that time.

There is also a map included in the Plan (reproduced in Figure 25) that was filtered to just show High and Extreme Probability and Consequence.\(^{144}\)

\[\text{Figure 25: High and Extreme Probability and Consequence}\]

This provides additional definition and notes the locations of key infrastructure that include critical communications links among others. At least one of these zones is in the southern part of the Island. The study identifies the additional risk that this particular critical infrastructure is

\(^{144}\)Ibid., page 19.
connected by only one road access from the current and proposed new locations for Hall 1, which makes the move to a response out of Hall 2 even more important.

**Structure Protection**

The Plan indicated structure protection was being addressed by a planned sprinkler bylaw for new developments.\(^{145}\) This bylaw, however, was never passed by BIM (and likely cannot be, under the terms of the *Building Act* (B.C.)). There is also a discussion about FireSmart in terms of construction issues, roofing materials and clearing of ground cover and fuels.

The Plan includes a recommendation related to structure protection sprinkler systems that could be deployed and as well as the need for increased training for members of the Department.\(^{146}\) The Department has trained a number of its members in certain interface and wildland firefighting skills, though the training is not well documented and may not be entirely up to date. Some members have also been trained in the use of structure protection units. Properly recorded wildfire and interface training should a component of the Department’s overall program to ensure it can undertake an effective response.


\(^{146}\) *Ibid.*, page 47
Single Points of Access

The Plan also commented on the single points of access to a number of areas on the Island, a point which was evident to the Consultants when they toured the Department’s fire protection service area.

The single points of access are illustrated in a map from the Plan, reproduced at Figure 26. In a major incident, access could be lost and residents attempting to leave in the face of an interface event or other disaster, may block the narrow roads, limiting access for Department apparatus. Alternatively, the incident may block or cut off the only route to a portion of the Island. This is especially critical given that Hall 1 is on Grafton Road which, if blocked west of the fire hall, would severely impair response to the south and west portions of the Island. The EPC is

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147 Ibid., page 32.
currently working on evacuation plans as part of the community’s emergency planning, taking into account these access issues.

**Training**

The Plan recommended that members of the Department be trained to the “S100 and S215 on an annual basis”. It also recommends that all firefighters and officers receive ICS training (which is required under the Playbook as well).

The Plan contains two recommendations relating to training:

1. **Recommendation 20**: The community of Bowen Island should consider funding a full- or part-time Fire Prevention Officer to address the numerous fire risk issues identified in this plan.

2. **Recommendation 21**: Given the risk of fire to the community, the Bowen Island Volunteer Fire Department should adopt an advanced program that fosters continuous improvement and skill renewal.

These training issues are addressed within other recommendations in this report. The concept of a full- or part-time Fire Prevention Officer is not specifically addressed – with the responsibilities for such a role are currently allocated amongst the three senior officers.

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Hazard, Risk and Vulnerability Assessment

The most recent HRVA was produced in 2018 by EmergeX Planning Inc. and notes eight priority risks for Bowen Island:\textsuperscript{151}

- Earthquake
- Wildland Urban Interface Fire
- Power Outage
- Marine Accident
- Epidemic or Pandemic
- Rockfall
- Extreme Weather
- Structure Fire.

These different risks are summarized as follows:\textsuperscript{152}

- **Earthquake**
  - Violent shaking of the earth’s surface accompanying movement along a fault rupture. Seismic energy traveling in waves may cause damage to structures, generate tsunamis, trigger landslides, liquefaction or other geologic events. There are three types of damaging seismic categories which could affect British Columbia:
    - **Crustal Earthquakes**: typically, low magnitude ground movement occurring along faults at an average depth of 10 – 20 km.
    - **Sub-crustal Earthquakes**: Occur at a depth of 30 – 70 km are produced by fracturing and frictional slipping of pre-existing faults along a tectonic plate.
    - **Subduction Earthquakes**: The most powerful type of earthquake, these occur when there is a massive shift at the junction of multiple tectonic plates.
- **Wildland Urban Interface Fire**
  - Fires that have encroached on a developed and populated area.
- **Power Outage**
  - The extended loss of electricity delivery to homes and businesses.
- **Marine Accident**
  - Accidents that include collisions, groundings, strikings, explosions and fires, structural failures, accidental spills of petroleum products or chemicals, loss of cargo and human death or injury.
- **Epidemic or Pandemic**
  - A pandemic refers to an epidemic that spans a large geographic area and can often become a global situation. An epidemic is a situation where a disease affects many people in a given area, resulting in illness and potential death.

\textsuperscript{151} EmergeX HRVA Assessment 2018, page 1.
\textsuperscript{152} Ibid., pages 6, 7, 8.
• Rockfall
  o One or more rocks fall freely from a cliff edge or rock face.
• Extreme Weather
  o Unexpected, unusual, unpredictable or unseasonal severe weather, which may include blizzards, ice storms, lightening or snowstorms.
  o Blizzard: Combines low temperatures, blowing snow and wind with speeds ranging from 90 to 130 km/hour. Conditions are most severe in open or deforested areas where there are no trees or structure to act as wind breakers.
  o Ice Storm: A combination of high wind, rain, and freezing temperature creates freezing rain, which adheres to roads, buildings trees, power lines and electrical towers causing structures to collapse.
  o Lightning: Ascending moisture laden unstable air leads to the formation of thunderclouds which transmit electrical charges of up to 100 million volts of electricity from cloud to cloud or ground.
  o Snowstorm: The accumulation of several centimeters to meters of snow that covers roads and infrastructure.
• Structure Fire
  o A fire that compromises homes, offices, factories and other structures.

The HRVA notes that 17% of the population of BIM is aged 14 or younger, which is higher than the provincial average of 14% and thus a risk point. School locations of concern are:  
  • Bowen Island Community School, 1041 Mount Gardner Rd. approx. 335 students
  • Island Pacific School, 671 Carter Rd, approx. 65 students
  • Island Discovery Learning Community, 889 Cowan Point Drive, 10-30 students, depending on the day
  • Bowen Children’s Centre, 650 Carter Rd, up to 40 students and 20 drop- in families
  • Bowen Island Montessori School, 587B Artisan Lane, 8-16 students.

The study also notes that 21% of residents are over 65, which is higher than the provincial average of 18%, and notes the following locations of potential concern:  
  • Bowen Court, a seniors housing cooperative at 1070 Miller Rd
  • a new seniors’ residence (Snug Cove House) is also currently under construction northwest of Bowen Court.

The HRVA identified four reservoirs which provide water for various parts of the Island each of which may be at some particular risk during an emergency:  
  • Josephine Lake (Cowan Point Utility)

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153 Ibid., page 10.
154 Ibid., page 11.
155 Ibid., page 12.
- Honeymoon Lake (BIM)
- Grafton Lake (BIM)
- Eagle Cliff Reservoir (BIM).

The report notes the following critical response and recovery facilities:

- Fire Hall 1, 788 Grafton Rd
- Fire Hall 2 (Primary EOC), 1421 Adams Rd
- RCMP Station, 1017 Miller Rd
- BC Ambulance Station #225, 1034 Miller Rd
- Municipal Hall (Secondary EOC), 981 Artisan Lane
- Public Works Yard #1, 1060 Mount Gardner Rd
- Public Works Yard #2, Athletic Park Rd.

There are only two fuel distribution points, and these are adjacent and these may represent a single point of failure in the case of a prolonged delay to replace supplies:

- Gasoline and Diesel Storage, Pubic Works Yard, 1060 Mount Gardner Rd
- Gasoline and Diesel Storage, Bowen Fuels Station, 1062 Mount Gardner Rd

Bowen Fuels at 1062 Mount Gardner Road has the following product and capacity:

- Type & Tank Capacity
- Regular Gasoline 20,000 Litres
- Premium Gasoline 7,000 Litres
- Marked Gasoline 7,000 Litres
- Regular Diesel 7,000 Litres
- Marked Diesel 7,000 Litres

There also what might be considered secondary fuel storage capacity at the public works yard and at Twin Island Excavating however there is not a guarantee that maximum fuel levels will always be present.

Municipal water systems

- Safe and accessible water for drinking and sanitation is imperative to the health and well-being of the residents and visitors within the Bowen Island Municipality. According to Public Safety Canada, approximately 206,080 litres of water is needed to sustain...

---

156 Ibid., page 13.
157 Ibid., page 13.
158 Ibid., page 14.
159 Ibid., page 14.
Bowen Island’s population of 3680 for 14 days\(^{160}\). This amounts to four litres per person per day for the two-week duration. The Municipality’s current water supply consists of both municipal and private water sources.

The report notes there are seven municipally-operated water systems ranging from the smallest with 19 active users in King Edward Bay to 630 in Cove Bay.\(^{161}\)

**Table 21: Municipally-Operated Water Systems**

<table>
<thead>
<tr>
<th>Water System</th>
<th>Approx. number of active users</th>
</tr>
</thead>
<tbody>
<tr>
<td>King Edward Bay</td>
<td>19</td>
</tr>
<tr>
<td>Bowen Bay</td>
<td>60</td>
</tr>
<tr>
<td>Hood Point</td>
<td>89</td>
</tr>
<tr>
<td>Eagle Cliff</td>
<td>98</td>
</tr>
<tr>
<td>Tunstall Bay</td>
<td>128</td>
</tr>
<tr>
<td>Bluewater Park</td>
<td>142</td>
</tr>
<tr>
<td>Cove Bay (includes Valhalla and Cates Hill)</td>
<td>630</td>
</tr>
</tbody>
</table>

The EOCs for BIM are listed in Table 22 with Hall 2 being the primary EOC until the new Hall 1 is completed.\(^{162}\)

**Table 22: Primary and Secondary EOC locations**

<table>
<thead>
<tr>
<th>Designated Building</th>
<th>Address</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary EOC</strong>: Bowen Island Hall 2</td>
<td>Fire Hall 2, Satellite Hall</td>
<td>250 sq. ft EOC; hall has backup power, a satellite phone and a communications room including a VHF base station and portable radios.</td>
</tr>
<tr>
<td>(Hall 1 will become the primary EOC once completed)</td>
<td>1421 Adams Rd Bowen Island, BC V0N 1G2</td>
<td></td>
</tr>
<tr>
<td><strong>Secondary EOC</strong>: Bowen Island Municipal Hall 1 (Hall 2 will become secondary once the new Hall 1 is completed)</td>
<td>Bowen Island Municipal Hall 981 Artisan Lane Bowen Island, B.C. V0N 1G2</td>
<td>No backup power supply available</td>
</tr>
</tbody>
</table>

---


\(^{161}\) EmergeX HRVA Assessment 2018, page 17. There are some 10 other, privately-operated water supplies on the Island as well.

Appendix D\textsuperscript{163} lists the HRVA recommendations, seven of the first 10 deal with fire issues.

<table>
<thead>
<tr>
<th>Recommendation Number &amp; Hazard</th>
<th>Recommendation</th>
<th>Resources Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Earthquake</td>
<td>Continue to advance the Neighbourhood Emergency Resource People (NERP) program, and promote personal independence, earthquake safety and emergency survival kits (e.g. Grab ‘n’ Go bags) for the home, car and workplace.</td>
<td>Staff Time</td>
</tr>
<tr>
<td>2. Earthquake</td>
<td>Ensure new community/ municipal buildings meet at least minimum seismic design and loading requirements, particularly infrastructure and response facilities (e.g. new fire hall, community centre) that will be critical post-disaster.</td>
<td>Staff Time</td>
</tr>
<tr>
<td>3. Earthquake</td>
<td>Seek funding for earthquake specific planning, including an earthquake immediate response plan and a rapid damage assessment plan, to guide municipal activity post-earthquake</td>
<td>Staff Time Funding for Consultant</td>
</tr>
<tr>
<td>4. Structure Fire</td>
<td>Strive for Exterior and Interior Operations Service Level competency as per the \textit{British Columbia Fire Service Minimum Training Standards Structure Firefighters Competency and Training Playbook} for Bowen Island Fire Department members.</td>
<td>Staff Time</td>
</tr>
<tr>
<td>5. Structure Fire</td>
<td>Continue to provide informational assistance to residents where needed to empower locals and reduce the potential for structure fires, for example recommending that residential sprinkler systems are installed in all new home construction. The Municipality should also follow recommendations of the Fire Chief in construction of municipal buildings.</td>
<td>Staff Time</td>
</tr>
<tr>
<td>7. Structure Fire</td>
<td>Update the 1993 \textit{Bowen Island Fire Protection District Bylaw No. 41} to reflect current conditions and to empower Bowen Island Municipal staff to enforce fire related bylaws.</td>
<td>Staff Time</td>
</tr>
<tr>
<td>8. WUI Fire</td>
<td>Continue with FireSmart communication goals around the community, including the dissemination of information through brochures, public events, the BIM website and social media to raise awareness.</td>
<td>Staff Time</td>
</tr>
</tbody>
</table>

\textsuperscript{163} Ibid., page 40.
Seek funding to update the 2007 Community Wildfire Protection Plan, conducted for the Municipality to mitigate the potential impact of a major wildland fire event on the island.

Engage in evacuation planning to address the unique needs associated with evacuating an island and evacuating neighbourhoods with single accesses.

The HRVA assessment is very recent and provides an up-to-date assessment in terms of structure fires and risks\(^{164}\).

**Recommendation:** The Department, to the extent that it is a primary responder to events or risks identified, should adopt and implement the recommendations as set out in the 2018 HRVA assessment.

\(^{164}\) *Ibid*, page 27.
Benchmark Survey Analysis

Part of the core service review included a survey (see Appendix 7) of similar sized fire departments to understand how the benchmark fire departments were staffed, funded and supported. The six departments chosen were reasonably similar in terms of the population served; as well it was important to consider fire departments that had a similar degree of isolation.

For this reason, two of the fire departments chosen for the survey operate on Gulf Islands (Pender Island and Gabriola Island). The other four departments surveyed, Gibsons, McKenzie, Invermere and Grand Forks, protect similar size populations and are also not surrounded by other fire departments that can provide immediate support.\(^{165}\)

Population Served

For the fire departments surveyed, the populations served ranged from 2,250 to 10,018 with the average being 5,019 (see Table 23). BIFD serves a core population of about 3,680 without adjustment for seasonal fluctuations.

<table>
<thead>
<tr>
<th>Department</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowen Island</td>
<td>3,680</td>
</tr>
<tr>
<td>Gabriola Island</td>
<td>4,033</td>
</tr>
<tr>
<td>Gibsons</td>
<td>10,018</td>
</tr>
<tr>
<td>Grand Forks</td>
<td>8,049</td>
</tr>
<tr>
<td>Invermere</td>
<td>3,391</td>
</tr>
<tr>
<td>MacKenzie</td>
<td>3,714</td>
</tr>
<tr>
<td>Pender Island</td>
<td>2,250</td>
</tr>
<tr>
<td>Average</td>
<td>5,019</td>
</tr>
<tr>
<td>Median</td>
<td>3,714</td>
</tr>
</tbody>
</table>

\(^{165}\) As noted above, Bowen Island cannot generally rely on external mutual aid (and has no such arrangements in place). In this way it is different from the Sasamat Volunteer Fire Department, which serve Anmore and Belcarra, and might otherwise be reasonably considered similar in size. Sasamat, however, is surrounded by several well-staffed departments which can provide near immediate mutual aid.
The relationship of BIM to the benchmark is illustrated in Figure 27 and from this we can see that in terms of population served that Bowen Island compares well with four of the six benchmarks.

![Benchmark Populations](image)

**Figure 27: Populations Served**

**Number of Firefighters and Officers and Benefits/Remuneration**

The Department’s staffing level is between 25 and 30 members. There are 30 members on the roster, but a number of them are not regularly attending. For purposes of the comparison, we are treating the Department as having 26 members (plus the Fire Chief). The overall number of personnel and their geographic disposition in the response area can impact the Department’s ability to meet FUS requirements. Where a department has more than one fire hall the necessary stationing of apparatus will determine where firefighters respond, supported by storage of turnout gear and equipment. The number of firehalls ranged from one to five, with the average being two. The BIFD currently has two firehalls.

In reviewing the staffing of the benchmark departments, the number of officers and firefighters (excluding the Fire Chief) ranged from 25 to 42. The average number of firefighters was 34 as compared to the BIFD at 26. In relation to compensation, the Department provides its members with a quite generous benefits program, but does not compensate for call outs or practices, but it does have a generous benefits program. Each of the benchmark departments paid members for practices and/or call outs, and some of them also had benefits programs (though none of those programs were as expansive as BIM’s).

The officer positions, excluding the fire chief, ranged from five to a high of 14 with the average being 8.3 positions. In the BIFD there are currently five officer positions.

The number of firefighters in the benchmark group is summarized in Table 24 for the actual population and calculated for comparison with the number of firefighters per 5,000 population.
Table 24:  Number of Firefighters Per 5,000 Population

<table>
<thead>
<tr>
<th>Department</th>
<th>Total Firefighters</th>
<th>Firefighters/5,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowen Island</td>
<td>25</td>
<td>34</td>
</tr>
<tr>
<td>Gabriola Island</td>
<td>40</td>
<td>50</td>
</tr>
<tr>
<td>Gibsons</td>
<td>42</td>
<td>21</td>
</tr>
<tr>
<td>Grand Forks</td>
<td>38</td>
<td>24</td>
</tr>
<tr>
<td>Invermere</td>
<td>28</td>
<td>41</td>
</tr>
<tr>
<td>MacKenzie</td>
<td>36</td>
<td>48</td>
</tr>
<tr>
<td>Pender Island</td>
<td>28</td>
<td>62</td>
</tr>
<tr>
<td>Average</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td>Median</td>
<td>36</td>
<td>48</td>
</tr>
</tbody>
</table>

This is shown in Figure 28 and from this it can be seen that in terms of island fire departments, Bowen Island has fewer firefighters per unit of population than either Gabriola or Pender Island. When compared to fire departments not on islands, it is in the middle of the group with two (Gibsons and Grand Forks) with a lower ratio and two (MacKenzie and Invermere) with a higher ratio.

Figure 28:  Firefighters per 5,000 Population
The number of firefighters and officers for the benchmark departments are shown in Table 25 and in each case Bowen Island has the lowest number of officers and firefighters.

**Table 25: Number of Officers and Firefighters, not including the Fire Chief**

<table>
<thead>
<tr>
<th>Position</th>
<th>Bowen Island</th>
<th>Pender Island</th>
<th>Invermere</th>
<th>MacKenzie</th>
<th>Gibsons</th>
<th>Gabriola Island</th>
<th>Grand Forks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deputy Fire Chief</td>
<td>0.5</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Asst Chief</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Captain</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Lieutenant</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Training Officer</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Total Officers</td>
<td>5.5</td>
<td>9</td>
<td>5</td>
<td>14</td>
<td>7</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Firefighters</td>
<td>20</td>
<td>20</td>
<td>23</td>
<td>24</td>
<td>36</td>
<td>32</td>
<td>30</td>
</tr>
<tr>
<td>Total personnel</td>
<td>25.5</td>
<td>29</td>
<td>28</td>
<td>38</td>
<td>43</td>
<td>40</td>
<td>40</td>
</tr>
</tbody>
</table>

**Department Assets**

BIFD’s initial apparatus response is from Hall 1; a new approach has recently been introduced which will also see a response out of Hall 2.

Table 26 sets out the number of principal apparatus for the Department and each of the benchmark departments. BIFD’s deployment of apparatus is comparable to the benchmarks, except that three of the benchmarks deploy additional tenders.

**Table 26: Principal Apparatus**

<table>
<thead>
<tr>
<th>Department</th>
<th>Engines</th>
<th>Tenders</th>
<th>Rescue</th>
<th>Ladders</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowen Island</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Gabriola Island</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Gibsons</td>
<td>2</td>
<td></td>
<td></td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Grand Forks</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Invermere</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>MacKenzie</td>
<td>3</td>
<td>1</td>
<td></td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Pender Island</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Average</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Median</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
Playbook Level of Service

The chosen level of service provided by the benchmark departments was fairly evenly split with four offering Full Service and three delivering Interior Service, including the BIFD.

Training Budget

The aggregate budget allocated for firefighter training ranged from $19,000 to $47,000 with the average amount budgeted among the benchmark departments being $28,333. It is worth noting that the highest figure was from a fire department that has a full live fire training facility. The Department’s budget for training in 2019 was $31,500, but, as in the two previous years, it materially underspent on member and officer training. Its budgeted and actual amounts are shown in the table below. The Department’s budget for training was reasonable in comparison to the amounts budgeted by the benchmark departments (though based on its actual expenditure, it was at the low end, if the benchmarks expended their training budgets each year).

Table 27: Annual Training Budget (2019)

<table>
<thead>
<tr>
<th>Department</th>
<th>2019 Training Budget</th>
<th>Level of Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gabriola Island</td>
<td>$25,000</td>
<td>Full Service</td>
</tr>
<tr>
<td>Gibsons</td>
<td>$40,000</td>
<td>Full Service</td>
</tr>
<tr>
<td>Grand Forks</td>
<td>$22,000</td>
<td>Full Service</td>
</tr>
<tr>
<td>Invermere</td>
<td>$19,000</td>
<td>Interior</td>
</tr>
<tr>
<td>MacKenzie</td>
<td>$20,000</td>
<td>Interior</td>
</tr>
<tr>
<td>Pender Island</td>
<td>$47,000</td>
<td>Full Service</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>$28,333</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Median</strong></td>
<td><strong>$23,500</strong></td>
<td></td>
</tr>
<tr>
<td>Bowen Island</td>
<td>$31,500/$18,581</td>
<td>Interior</td>
</tr>
</tbody>
</table>

Fire Inspections

The number of inspections identified in the benchmark departments is shown in Table 28 and these range from 20 to 400 with the average being 158. BIFD does not currently undertake fire inspections. Neither Pender Island nor Gabriola Island are statutorily required to undertake inspections, since they are not incorporated jurisdictions. As such, we also show a column that includes only those departments which are statutorily required to undertake fire inspections under the Fire Services Act.
Table 28: Fire Inspections

<table>
<thead>
<tr>
<th>Department</th>
<th>Inspections</th>
<th>Statutorily Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gabriola Island</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Gibsons</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>Grand Forks</td>
<td>160</td>
<td>160</td>
</tr>
<tr>
<td>Invermere</td>
<td>235</td>
<td>235</td>
</tr>
<tr>
<td>MacKenzie</td>
<td>240</td>
<td>240</td>
</tr>
<tr>
<td>Pender Island</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>184</strong></td>
<td><strong>259</strong></td>
</tr>
<tr>
<td><strong>Median</strong></td>
<td><strong>193</strong></td>
<td><strong>238</strong></td>
</tr>
<tr>
<td><strong>Bowen Island</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
</tr>
</tbody>
</table>

Operating Budgets

The operating budgets of the benchmark departments ranged from $500,480 to $999,275 with the average being $632,209. In terms of the per capita cost, the budgets ranged between $86 and $336 with an average of $126. BIFD was notably below the average on a per capita basis at $101, as well as being the lowest actual amount ($373,500) of those examined.

Table 29: Operating Budgets

<table>
<thead>
<tr>
<th>Department</th>
<th>Operating</th>
<th>Per capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gabriola Island</td>
<td>$500,480</td>
<td>$124</td>
</tr>
<tr>
<td>Gibsons</td>
<td>$999,275</td>
<td>$100</td>
</tr>
<tr>
<td>Grand Forks</td>
<td>$695,354</td>
<td>$86</td>
</tr>
<tr>
<td>Invermere</td>
<td>$563,130</td>
<td>$166</td>
</tr>
<tr>
<td>MacKenzie</td>
<td>$536,960</td>
<td>$145</td>
</tr>
<tr>
<td>Pender Island</td>
<td>$756,761</td>
<td>$336</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>$675,282</strong></td>
<td><strong>$160</strong></td>
</tr>
<tr>
<td><strong>Median</strong></td>
<td><strong>$629,242</strong></td>
<td><strong>$135</strong></td>
</tr>
<tr>
<td><strong>Bowen Island</strong></td>
<td><strong>$373,500</strong></td>
<td><strong>$101</strong></td>
</tr>
</tbody>
</table>
Conclusion

The Department was initially created as an Improvement District and transitioned to become a service of local government when Bowen Island was incorporated in 1999. The Department operates from two fire halls, one of which (Hall 1) is scheduled for replacement in the near future. When this hall is relocated, the two fire halls will provide coverage to all current properties and meet the FUS requirement of being within eight kilometres by road network for residential structures.

A core services review of the Department was initiated in October 2019 with an expectation that all facets of the BIFD would be reviewed. As part of the review process, DMA had access to all available records and met numerous times with the acting Fire Chief and other members of the Department. These meetings included attendance at several evening sessions where the majority of the volunteers and officers discussed the scope of the review. Meetings were also held with the Mayor and BIM corporate officers166.

As part of each of these meetings we discussed the changing regulatory environment that fire services in the province are required to meet including the Playbook, WorkSafe BC and in particular Part 31, the requirements of the Fire Underwriters Survey, the new Fire Safety Act and the pending changes to the Emergency Program Act. Each of these has mandatory requirements which must be complied with for the safety of the public and firefighters.

For the record, and without exception, all conversations with each member of the Department and the BIM community were straightforward, very sincere and each expressed a strong interest in seeing the Department build on its long history and continue to evolve to provide the best possible emergency response. Each conversation and all input that we received was respectful and helpful.

The Department is aware of the changes that need to be made relative to its ability to meet the requirements of the Playbook. There are a number of initiatives required including prior learning assessments to determine the baseline of training for each member and the development of a training plan to confirm sufficient members are trained to operate at the Interior service level. The training plan will be inclusive of records of all training including the lesson material and the assessments made and that these records must be available for audit to confirm the level of service. To be clear, BIM is the AHJ for such matters and it rests with the Mayor and Council to confirm their support for this, as the level of service is a Council policy. The requirements to be compliant with the Playbook are extensive and are listed at Appendix 2.

The Department, like all local government fire services, operates only within the powers granted by its establishment and operational bylaws. In the case of BIM, the bylaws were inherited from the Improvement District and have yet to be updated. This review and update should include a

166 The Chief Administrative Officer, the Chief Financial Officer and the Corporate Officer.
Review of the breadth of services offered by the Department. As well, BIM will require a plan to address all of the issues within the Fire Safety Act when it is proclaimed in the near future.

Review of the physical environment of Bowen Island confirmed the complexity of providing a fire response over challenging terrain including steep elevations, very narrow roads with tight turning radii and low travel speeds as well as areas without fire hydrants. Our recommendations for fire apparatus include, at a minimum, the capability to respond from each of the two fire halls with a rated Engine, a Tender and a Mini-Pumper as well as the single Rescue unit that should operate from Hall 1. The Fire Underwriters have recommended that the Department consider an aerial ladder truck at some point and, if this recommendation is adopted, it would respond from the new Hall 1.

Issues such as budgets and staffing levels were examined by means of a benchmark survey with Pender Island and Gabriola Island as well as McKenzie, Invermere, Gibsons and Grand Forks. Bowen Island and these departments are reasonably similar with regard to the population they serve; they are also somewhat isolated as is Bowen Island, lacking any immediate mutual aid capability. In other words, they have to rely on their own resources.

Compared to the majority of the benchmark fire departments, the BIFD has relatively fewer firefighters and officers. The per capita operating budget is below the average and median for the group. It should also be noted that the BIFD training budget was the second highest amongst the comparative departments however, the Department was only able to utilize approximately 70% of the available funds over the past three years. Based on the recommendations in the Training section of this report, the budget should not be reduced in the near term as the Department will need to increase training activities to meet the current service level designation.

The priorities for the Department going forward include developing a transitional and operating budget to ensure its firefighters can operate safely and within the requirements of the Playbook and WorkSafe BC. To achieve this a transitional budget will allow for prior learning assessments to develop a baseline for all members, coupled with a long-term training plan to ensure ongoing training for new firefighters and maintenance training for longer term members is maintained.

The Department will also require a revision to its bylaw and establishment of a system of inspections to meet its legislative requirements. This activity, coupled with the requirements to manage training issues will require an amount of administrative support, something which is found with volunteer departments of their size.

The Department will also require a capital plan to replace the existing apparatus which are no longer accepted by the FUS and to provide the additional apparatus as discussed in this report to ensure an appropriate level of response from each of the two fire halls.

In summary, the Department and BIM have a significant number of issues to address, with priorities being to ensure training and equipment is appropriate to their defined level of service to protect both the public and firefighters on Bowen Island.
# Appendix 1: List of Defined Terms and Acronyms

<table>
<thead>
<tr>
<th>Term/Acronym</th>
<th>Definition</th>
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</thead>
<tbody>
<tr>
<td>1995 Agreement</td>
<td>Metro-Vancouver Mutual Aid Agreement for Emergencies, 13 October 1995</td>
</tr>
<tr>
<td>2012 Service Plan</td>
<td>Fire Department Service Plan (2012)</td>
</tr>
<tr>
<td>AHJ</td>
<td>Authority Having Jurisdiction</td>
</tr>
<tr>
<td>BCEHS</td>
<td>British Columbia Emergency Health Services</td>
</tr>
<tr>
<td>BCEMS</td>
<td>British Columbia Emergency Management System</td>
</tr>
<tr>
<td>BFF</td>
<td>Basic Fire Flow</td>
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<tr>
<td>BIFD</td>
<td>Bowen Island Fire Department</td>
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<tr>
<td>BIM</td>
<td>Bowen Island Municipality</td>
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<tr>
<td>Bylaw No. 12</td>
<td><em>Bowen Island Municipality “Fire Protection” Reserve Fund Bylaw No. 12, 2000</em></td>
</tr>
<tr>
<td>Bylaw No. 41</td>
<td><em>Bowen Island Fire Protection District Fire Regulations Bylaw No. 41, 1993</em></td>
</tr>
<tr>
<td>CAO</td>
<td>Chief Administrative Officer</td>
</tr>
<tr>
<td>CFO</td>
<td>Chief Financial Officer</td>
</tr>
<tr>
<td>Consultant</td>
<td>Dave Mitchell &amp; Associates Ltd.</td>
</tr>
<tr>
<td>Department</td>
<td>Bowen Island Fire Department</td>
</tr>
<tr>
<td>DFC</td>
<td>Deputy Fire Chief</td>
</tr>
<tr>
<td>DMA</td>
<td>Dave Mitchell &amp; Associates Ltd.</td>
</tr>
<tr>
<td>DPG</td>
<td>Dwelling Protection Grade</td>
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<tr>
<td>CSA</td>
<td>Canadian Standards Association</td>
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<tr>
<td>EOC</td>
<td>Emergency Operations Centre</td>
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<tr>
<td>EPC</td>
<td>Emergency Program Coordinator</td>
</tr>
<tr>
<td>EPEC</td>
<td>Emergency Program Executive Committee</td>
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<tr>
<td>FMR</td>
<td>First Medical Responder</td>
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<tr>
<td>FO-I</td>
<td>Fire Officer I</td>
</tr>
<tr>
<td>FTE</td>
<td>full-time equivalent</td>
</tr>
<tr>
<td>Term/Acronym</td>
<td>Definition</td>
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<tr>
<td>FUS</td>
<td>Fire Underwriters’ Survey</td>
</tr>
<tr>
<td>HAZMAT</td>
<td>Hazardous Materials</td>
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<tr>
<td>HRVA</td>
<td>Hazard, Risk and Vulnerability Assessment</td>
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<tr>
<td>IC</td>
<td>Incident Commander</td>
</tr>
<tr>
<td>ICS</td>
<td>Incident Command System</td>
</tr>
<tr>
<td>IDLH</td>
<td>Immediately Dangerous to Life and Health</td>
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<tr>
<td>IGPM</td>
<td>Imperial Gallons Per Minute</td>
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<tr>
<td>ISO</td>
<td>Incident Safety Officer</td>
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<tr>
<td>JIBC</td>
<td>Justice Institute of BC</td>
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<tr>
<td>JPR</td>
<td>Job Performance Requirement</td>
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<tr>
<td>LAFC</td>
<td>Local Assistant to the Fire Commissioner</td>
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<tr>
<td>Local Assistant</td>
<td>Local Assistant to the Fire Commissioner</td>
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<tr>
<td>Municipality</td>
<td>Bowen Island Municipality</td>
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<tr>
<td>MOU</td>
<td>Memorandum of Understanding</td>
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<tr>
<td>NFPA</td>
<td>National Fire Protection Association</td>
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<tr>
<td>OFC</td>
<td>Office of the Fire Commissioner</td>
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<tr>
<td>OG</td>
<td>Operational Guideline</td>
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<tr>
<td>OH&amp;S</td>
<td>Occupational Health and Safety</td>
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<tr>
<td>OH&amp;S Regulations</td>
<td><em>Occupational Health and Safety Regulation, B.C. Reg. 296/97</em></td>
</tr>
<tr>
<td>OIC</td>
<td>Order-in-Council</td>
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<tr>
<td>PASS</td>
<td>Personal Alert Safety System</td>
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<tr>
<td>PFPC</td>
<td>Public Fire Protection Classification</td>
</tr>
<tr>
<td>Plan</td>
<td>2007 Community Wildfire Protection Plan by Bruce Blackwell &amp; Associates</td>
</tr>
<tr>
<td>PLA</td>
<td>Prior Learning Assessment</td>
</tr>
<tr>
<td>PPE</td>
<td>Personal Protective Equipment</td>
</tr>
<tr>
<td>RIT</td>
<td>Rapid Intervention Team</td>
</tr>
<tr>
<td>RMS</td>
<td>Records Management System</td>
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<tr>
<td>Term/Acronym</td>
<td>Definition</td>
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<td>-------------</td>
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<tr>
<td>SCBA</td>
<td>Self-Contained Breathing Apparatus</td>
</tr>
<tr>
<td>TANKER</td>
<td>An apparatus type designated principally carry water to a fire scene.</td>
</tr>
<tr>
<td>TENDER</td>
<td>An apparatus type designated principally carry water to a fire scene. The terms Tanker and Tender are used interchangeably in the BC fire service.</td>
</tr>
<tr>
<td>Training Officer</td>
<td>Assistant Fire Chief/Training Officer</td>
</tr>
<tr>
<td>WCA</td>
<td>Workers Compensation Act (B.C.)</td>
</tr>
</tbody>
</table>
Appendix 2: Playbook Training Requirements

Structure Firefighters Competency and Training

PLAYBOOK

References to NFPA Standards for:

- Train the Trainer
- Exterior Operations Firefighter
- Interior Operations Firefighter
- Full Service Operations Firefighter
- Team Leader Exterior and Interior
- Risk Management Officer
- Company Fire Officer

Standards Referenced:

NFPA 220  Standard on Types of Building Construction
NFPA 921  Guide for Fire and Explosion Investigations
NFPA 1001 Standard for Fire Fighter Professional Qualifications
NFPA 1021 Standard for Fire Officer Professional Qualifications
NFPA 1041 Standard for Fire Service Instructor Professional Qualifications
NFPA 1407 Standard for Training Fire Service Rapid Intervention Crews
NFPA 1500 Standard on Occupational Safety and Health Program
NFPA 1584 Standard on the Rehabilitation Process for Members During Emergency Operations and Training Exercises
NFPA 5000 Building Construction and Safety Code
### Train the Trainer

<table>
<thead>
<tr>
<th>Competency Met</th>
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### 4.2.1 Definition of Duty. The management of basic resources and the records and reports essential to the instructional process.

### 4.2.2 Assemble course materials, given a specific topic, so that the lesson plan and all materials, resources, and equipment needed to deliver the lesson are obtained.

(A) Requisite Knowledge. Components of a lesson plan, policies and procedures for the procurement of materials and equipment, and resource availability.

(B) Requisite Skills. None required.

| Yes ☐ | No ☐ |

### 4.2.3 Prepare requests for resources, given training goals and current resources, so that the resources required to meet training goals are identified and documented.

(A) Requisite Knowledge. Resource management, sources of instructional resources and equipment.

(B) Requisite Skills. Training schedule completion.

| Yes ☐ | No ☐ |

### 4.2.4 Schedule single instructional sessions, given a training assignment, department scheduling procedures, instructional resources, facilities and timeline for delivery, so that the specified sessions are delivered according to department procedure.

(A) Requisite Knowledge. Departmental scheduling procedures and resource management.

(B) Requisite Skills. Training schedule completion.

| Yes ☐ | No ☐ |

### 4.3.2 Review instructional materials, given the materials for a specific topic, target audience, and learning environment, so that elements of the lesson plan, learning environment, and resources that need adaptation are identified.

(A) Requisite Knowledge. Recognition of student limitations and cultural diversity, methods of instruction, types of resource materials, organization of the learning environment, and policies and procedures.

(B) Requisite Skills. Analysis of resources, facilities, and materials

| Yes ☐ | No ☐ |

### 4.3.3 Adapt a prepared lesson plan, given course materials and an assignment, so that the needs of the student and the objectives of the lesson plan are achieved.

(A)* Requisite Knowledge. Elements of a lesson plan, selection of instructional aids and methods, and organization of the learning environment.

(B) Requisite Skills. Instructor preparation and organizational skills.

| Yes ☐ | No ☐ |

### 4.4.1 Definition of Duty. The delivery of instructional sessions utilizing prepared course materials.

### 4.4.2 Organize the classroom, laboratory, or outdoor learning environment, given a facility and an assignment, so that lighting, distractions, climate control or weather, noise control, seating, audiovisual equipment, teaching aids, and safety are considered.

(A) Requisite Knowledge. Classroom management and safety, advantages and limitations of audiovisual equipment and teaching aids, classroom arrangement, and methods and techniques of instruction.

(B) Requisite Skills. Use of instructional media and teaching aids.

| Yes ☐ | No ☐ |

### 4.4.3 Present prepared lessons, given a prepared lesson plan that specifies the presentation method(s), so that the method(s) indicated in the plan are used and the stated objectives or learning outcomes are achieved, applicable safety standards and practices are followed, and risks are addressed.

(A)* Requisite Knowledge. The laws and principles of learning, methods and techniques of instruction, lesson plan components and elements of the communication process, and lesson plan terminology and definitions; the impact of cultural differences on instructional delivery; safety rules, regulations, and practices; identification of training hazards; elements and limitations of distance learning; distance learning delivery methods; and the instructor’s role in distance learning.

(B) Requisite Skills. Oral communication techniques, methods and techniques of instruction, and utilization of lesson plans in an instructional setting.

<p>| Yes ☐ | No ☐ |</p>
<table>
<thead>
<tr>
<th>Train the Trainer</th>
<th>Competency Met</th>
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</table>
| **4.4.4** Adjust presentation, given a lesson plan and changing circumstances in the class environment, so that class continuity and the objectives or learning outcomes are achieved.  
(A) **Requisite Knowledge.** Methods of dealing with changing circumstances.  
(B) **Requisite Skills.** None required | Yes ☐ No ☐ |
| **4.5.1** **Definition of Duty.** The administration and grading of student evaluation instruments. |                |
| **4.5.2** Administer oral, written, and performance tests, given the lesson plan, evaluation instruments, and evaluation procedures of the agency, so that bias or discrimination is eliminated the testing is conducted according to procedures, and the security of the materials is maintained.  
(A) **Requisite Knowledge.** Test administration, agency policies, laws and policies pertaining to discrimination during training and testing, methods for eliminating testing bias, laws affecting records and disclosure of training information, purposes of evaluation and testing, and performance skills evaluation.  
(B) **Requisite Skills.** Use of skills checklists and oral questioning techniques. | Yes ☐ No ☐ |
| **4.5.3** Grade student oral, written, or performance tests, given class answer sheets or skills checklists and appropriate answer keys, so the examinations are accurately graded and properly secured.  
(A) **Requisite Knowledge.** Grading methods, methods for eliminating bias during grading, and maintaining confidentiality of scores.  
(B) **Requisite Skills.** None required. | Yes ☐ No ☐ |
| **4.5.5** Provide evaluation feedback to students, given evaluation data, so that the feedback is timely; specific enough for the student to make efforts to modify behavior; and objective, clear, and relevant; also include suggestions based on the data.  
(A) **Requisite Knowledge.** Reporting procedures and the interpretation of test results.  
(B) **Requisite Skills.** Communication skills and basic coaching. | Yes ☐ No ☐ |
<table>
<thead>
<tr>
<th>Exterior Operations – Firefighter</th>
<th>Competency Met</th>
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<tbody>
<tr>
<td><strong>Emergency Scene Traffic</strong></td>
<td></td>
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<tr>
<td>NFPA 1001 5.3.3</td>
<td></td>
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<tr>
<td>5.3.3* Establish and operate in work areas at emergency scenes, given protective equipment, traffic and scene control devices, structure fire and roadway emergency scenes, traffic hazards and downed electrical wires, an assignment, and SOPs, so that procedures are followed, protective equipment is worn, protected work areas are established as directed using traffic and scene control devices, and the fire fighter performs assigned tasks only in established, protected work areas.</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td><em>(A) Requisite Knowledge.</em> Potential hazards involved in operating on emergency scenes including vehicle traffic, utilities, and environmental conditions; proper procedures for dismounting apparatus in traffic; procedures for safe operation at emergency scenes; and the protective equipment available for members’ safety on emergency scenes and work zone designations.</td>
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<tr>
<td><em>(B) Requisite Skills.</em> The ability to use personal protective clothing, deploy traffic and scene control devices, dismount apparatus, and operate in the protected work areas as directed.</td>
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<tr>
<td><strong>Safety &amp; Communications</strong></td>
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<tr>
<td>NFPA 1001 5.1.1, 5.1.2, 5.2, 5.2.1, 5.2.2, 5.2.3, 5.3.2, 5.3.17, 5.3.18</td>
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<tr>
<td>5.1 General. For qualification at Level I, the fire fighter candidate shall meet the general knowledge requirements in 5.1.1; the general skill requirements in 5.1.2; the JPRs defined in Sections 5.2 through 5.5 of this standard; and the requirements defined in Chapter 5, Core Competencies for Operations Level Responders, and Section 6.6, Mission-Specific Competencies: Product Control, of NFPA 472, Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents.</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td><em>(A) Requisite Knowledge.</em> Procedures for reporting an emergency; departmental SOPs for taking and receiving alarms, radio codes, or procedures; and information needs of dispatch center.</td>
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<tr>
<td><em>(B) Requisite Skills.</em> The ability to operate fire department communications equipment, relay information, and record information.</td>
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<tr>
<td>5.2.1 Initiate the response to a reported emergency, given the report of an emergency, fire department SOPs, and communications equipment, so that all necessary information is obtained, communications equipment is operated correctly, and the information is relayed promptly and accurately to the dispatch center.</td>
<td>Yes ☐ No ☐</td>
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<tr>
<td><em>(A) Requisite Knowledge.</em> Fire department procedures for answering nonemergency telephone calls.</td>
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<td><em>(B) Requisite Skills.</em> The ability to operate fire station telephone and intercom equipment.</td>
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<tr>
<td>Exterior Operations – Firefighter</td>
<td>Competency Met</td>
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| **5.2.3** Transmit and receive messages via the fire department radio, given a fire department radio and operating procedures, so that the information is accurate, complete, clear, and relayed within the time established by the AHJ.  
(A) Requisite Knowledge. Departmental radio procedures and etiquette for routine traffic, emergency traffic, and emergency evacuation signals.  
(B) Requisite Skills. The ability to operate radio equipment and discriminate between routine and emergency traffic. | Yes ☐  
No ☐ |
| **5.3.2** * Respond on apparatus to an emergency scene, given personal protective clothing and other necessary personal protective equipment, so that the apparatus is correctly mounted and dismounted, seat belts are used while the vehicle is in motion, and other personal protective equipment is correctly used.  
(A) Requisite Knowledge. Mounting and dismounting procedures for riding fire apparatus, hazards and ways to avoid hazards associated with riding apparatus, prohibited practices, and types of department personal protective equipment and the means for usage.  
(B) Requisite Skills. The ability to use each piece of provided safety equipment. | Yes ☐  
No ☐ |
| **5.3.17** Illuminate the emergency scene, given fire service electrical equipment and an assignment, so that designated areas are illuminated and all equipment is operated within the manufacturer’s listed safety precautions.  
(A) Requisite Knowledge. Safety principles and practices, power supply capacity and limitations, and light deployment methods. Supply and lighting equipment, deploy cords and connectors, reset ground-fault interrupter (GFI) devices, and locate lights for best effect. | Yes ☐  
No ☐ |
| **5.3.18** Turn off building utilities, given tools and an assignment, so that the assignment is safely completed.  
(A) Requisite Knowledge. Properties, principles, and safety concerns for electricity, gas, and water systems; utility disconnect methods and associated dangers; and use of required safety equipment.  
(B) Requisite Skills. The ability to identify utility control devices, operate control valves or switches, and assess for related hazards. | Yes ☐  
No ☐ |
| **PPE and Self Contained Breathing Apparatus**  
NFPA 1001 5.1.2, 5.2, 5.3, 5.3.1, 5.3.2, 5.5.1  
5.1.2 General Skill Requirements. The ability to don personal protective clothing, doff personal protective clothing and prepare for reuse, hoist tools and equipment using ropes and the correct knot, and locate information in departmental documents and standard or code materials. | Yes ☐  
No ☐ |
| **5.2 Fire Department Communications.** This duty shall involve initiating responses, receiving telephone calls, and using fire department communications equipment to correctly relay verbal or written information, according to the JPRs in 5.2.1 through 5.2.4. | Yes ☐  
No ☐ |
| **5.3 Fireground Operations.** This duty shall involve performing activities necessary to ensure life safety, fire control, and property conservation, according to the JPRs in 5.3.1 through 5.3.20. | Yes ☐  
No ☐ |
| **5.3.1** * Use self-contained breathing apparatus (SCBA) during emergency operations, given SCBA and other personal protective equipment, so that the SCBA is correctly donned, the SCBA is correctly worn, controlled breathing techniques are used, emergency procedures are enacted if the SCBA fails, all low-air warnings are recognized, respiratory protection is not intentionally compromised, and hazardous areas are exited prior to air depletion.  
(A) Requisite Knowledge. Conditions that require respiratory protection, uses and limitations of SCBA, components of SCBA, donning procedures, breathing techniques, indications for and emergency procedures used with SCBA, and physical requirements of the SCBA wearer.  
(B) Requisite Skills. The ability to control breathing, replace SCBA air cylinders, use SCBA to exit through restricted passages, initiate and complete emergency procedures in the event of SCBA failure or air depletion, and complete donning procedures. | Yes ☐  
No ☐ |
### Exterior Operations – Firefighter

| 5.3.2* | Respond on apparatus to an emergency scene, given personal protective clothing and other necessary personal protective equipment, so that the apparatus is correctly mounted and dismounted, seat belts are used while the vehicle is in motion, and other personal protective equipment is correctly used.  
(A) **Requisite Knowledge.** Mounting and dismounting procedures for riding fire apparatus, hazards and ways to avoid hazards associated with riding apparatus, prohibited practices, and types of department personal protective equipment and the means for usage.  
(B) **Requisite Skills.** The ability to use each piece of provided safety equipment. | Competency Met | Yes □ No □ |

| 5.5.1 | Clean and check ladders, ventilation equipment, SCBA, ropes, salvage equipment, and hand tools, given cleaning tools, cleaning supplies, and an assignment, so that equipment is clean and maintained according to manufacturer’s or departmental guidelines, maintenance is recorded, and equipment is placed in a ready state or reported otherwise.  
(A) **Requisite Knowledge.** Types of cleaning methods for various tools and equipment, correct use of cleaning solvents, and manufacturer’s or departmental guidelines for cleaning equipment and tools.  
(B) **Requisite Skills.** The ability to select correct tools for various parts and pieces of equipment, follow guidelines, and complete recording and reporting procedures. | Competency Met | Yes □ No □ |

### Ropes and Knots

| NFPA 1001 5.1.2, 5.3.20, 5.5.1 | General Skill Requirements. | The ability to don personal protective clothing, doff personal protective clothing and prepare for reuse, hoist tools and equipment using ropes and the correct knot, and locate information in departmental documents and standard or code materials. | Yes □ No □ |

| 5.3.20 | Tie a knot appropriate for hoisting tool, given personnel protective equipment, tools, ropes, and an assignment, so that the knots used are appropriate for hoisting tools securely and as directed.  
(A) **Requisite Knowledge.** Knot types and usage; the difference between life safety and utility rope; reasons for placing rope out of service; the types of knots to use for given tools, ropes, or situations; hoisting methods for tools and equipment; and using rope to support response activities.  
(B) **Requisite Skills.** The ability to hoist tools using specific knots based on the type of tool. | Competency Met | Yes □ No □ |

| 5.5.1 | Clean and check ladders, ventilation equipment, SCBA, ropes, salvage equipment, and hand tools, given cleaning tools, cleaning supplies, and an assignment, so that equipment is clean and maintained according to manufacturer’s or departmental guidelines, maintenance is recorded, and equipment is placed in a ready state or reported otherwise.  
(A) **Requisite Knowledge.** Types of cleaning methods for various tools and equipment, correct use of cleaning solvents, and manufacturer’s or departmental guidelines for cleaning equipment and tools.  
(B) **Requisite Skills.** The ability to select correct tools for various parts and pieces of equipment, follow guidelines, and complete recording and reporting procedures. | Competency Met | Yes □ No □ |
<table>
<thead>
<tr>
<th>Fire Streams, Hose and Appliances</th>
<th>Competency Met</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NFPA 1001 5.3.7, 5.3.8, 5.5.1, 5.5.2</strong></td>
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<tr>
<td><strong>5.3.7</strong> Attack a passenger vehicle fire operating as a member of a team, given personal protective equipment, attack line, and hand tools, so that hazards are avoided, leaking flammable liquids are identified and controlled, protection from flash fires is maintained, all vehicle compartments are overhauled, and the fire is extinguished.</td>
<td>Yes</td>
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<tr>
<td><em>(A) Requisite Knowledge.</em> Principles of fire streams as they relate to fighting automobile fires; precautions to be followed when advancing hose lines toward an automobile; observable results that a fire stream has been properly applied; identifying alternative fuels and the hazards associated with them; dangerous conditions created during an automobile fire; common types of accidents or injuries related to fighting automobile fires and how to avoid them; how to access locked passenger, trunk, and engine compartments; and methods for overhauling an automobile.</td>
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<tr>
<td><em>(B) Requisite Skills.</em> The ability to identify automobile fuel type; assess and control fuel leaks; open, close, and adjust the flow and pattern on nozzles; apply water for maximum effectiveness while maintaining flash fire protection; advance 1 1/2 in. (38 mm) or larger diameter attack lines; and expose hidden fires by opening all automobile compartments. In stacked or piled and small unattached structures or storage containers that can be fought from the exterior, attack lines, hand tools and master stream devices, and an assignment, so that exposures are protected, the spread of fire is stopped, collapse hazards are avoided, water application is effective, the fire is extinguished, and signs of the origin area(s) and arson are preserved.</td>
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<tr>
<td><strong>5.3.8</strong> Extinguish fires in exterior Class A materials, given fires in stacked or piled and small unattached structures or storage containers that can be fought from the exterior, attack lines, hand tools and master stream devices, and an assignment, so that exposures are protected, the spread of fire is stopped, collapse hazards are avoided, water application is effective, the fire is extinguished, and signs of the origin area(s) and arson are preserved.</td>
<td>Yes</td>
</tr>
<tr>
<td><em>(A) Requisite Knowledge.</em> Types of attack lines and water streams appropriate for attacking stacked, piled materials and outdoor fires; dangers — such as collapse — associated with stacked and piled materials; various extinguishing agents and their effect on different material configurations; tools and methods to use in breaking up various types of materials; the difficulties related to complete extinguishment of stacked and piled materials; water application methods for exposure protection and fire extinguishment; dangers such as exposure to toxic or hazardous materials associated with storage building and container fires; obvious signs of origin and cause; and techniques for the preservation of fire cause evidence.</td>
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<tr>
<td><em>(B) Requisite Skills.</em> The ability to recognize inherent hazards related to the material’s configuration, operate handlines or master streams, break up material using hand tools and water streams, evaluate for complete extinguishment, operate hose lines and other water application devices, evaluate and modify water application for maximum penetration, search for and expose hidden fires, assess patterns for origin determination, and evaluate for complete extinguishment</td>
<td></td>
</tr>
<tr>
<td><strong>5.5.1</strong> Clean and check ladders, ventilation equipment, SCBA, ropes, salvage equipment, and hand tools, given cleaning tools, cleaning supplies, and an assignment, so that equipment is clean and maintained according to manufacturer’s or departmental guidelines, maintenance is recorded, and equipment is placed in a ready state or reported otherwise.</td>
<td>Yes</td>
</tr>
<tr>
<td><em>(A) Requisite Knowledge.</em> Types of cleaning methods for various tools and equipment, correct use of cleaning solvents, and manufacturer’s or departmental guidelines for cleaning equipment and tools.</td>
<td></td>
</tr>
<tr>
<td><em>(B) Requisite Skills.</em> The ability to select correct tools for various parts and pieces of equipment, follow guidelines, and complete recording and reporting procedures.</td>
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<tr>
<td><strong>5.5.2</strong> Clean, inspect, and return fire hose to service, given washing equipment, water, detergent, tools, and replacement gaskets, so that damage is noted and corrected, the hose is clean, and the equipment is placed in a ready state for service.</td>
<td>Yes</td>
</tr>
<tr>
<td><em>(A) Requisite Knowledge.</em> Departmental procedures for noting a defective hose and removing it from service, cleaning methods, and hose rolls and loads.</td>
<td></td>
</tr>
<tr>
<td><em>(B) Requisite Skills.</em> The ability to clean different types of hose; operate hose washing and drying equipment; mark defective hose; and replace coupling gaskets, roll hose, and reload hose.</td>
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<tr>
<td>Exterior Operations – Firefighter</td>
<td>Competency Met</td>
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<td>----------------------------------</td>
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<tr>
<td><strong>Ventilation</strong></td>
<td></td>
</tr>
<tr>
<td>NFPA 1001 5.3.11, 5.5.1</td>
<td></td>
</tr>
<tr>
<td>5.3.11 Perform horizontal ventilation on a structure operating as part of a team, given an assignment, personal protective equipment, ventilation tools, equipment, and ladders, so that the ventilation openings are free of obstructions, tools are used as designed, ladders are correctly placed, ventilation devices are correctly placed, and the structure is cleared of smoke. <strong>(A) Requisite Knowledge.</strong> The principles, advantages, limitations, and effects of horizontal, mechanical, and hydraulic ventilation; safety considerations when venting a structure; fire behavior in a structure; the products of combustion found in a structure fire; the signs, causes, effects, and prevention of backdrafts; and the relationship of oxygen concentration to life safety and fire growth. <strong>(B) Requisite Skills.</strong> The ability to transport and operate ventilation tools and equipment and ladders, and to use safe procedures for breaking window and door glass and removing obstructions</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td>5.5.1 Clean and check ladders, ventilation equipment, SCBA, ropes, salvage equipment, and hand tools, given cleaning tools, cleaning supplies, and an assignment, so that equipment is clean and maintained according to manufacturer's or departmental guidelines, maintenance is recorded, and equipment is placed in a ready state or reported otherwise. <strong>(A) Requisite Knowledge.</strong> Types of cleaning methods for various tools and equipment, correct use of cleaning solvents, and manufacturer's or departmental guidelines for cleaning equipment and tools. <strong>(B) Requisite Skills.</strong> The ability to select correct tools for various parts and pieces of equipment, follow guidelines, and complete recording and reporting procedures</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td><strong>Water Supply</strong></td>
<td></td>
</tr>
<tr>
<td>NFPA 1001 5.3.15, 5.5.1, 5.5.2</td>
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<tr>
<td>5.3.15* Connect a fire department pumper to a water supply as a member of a team, given supply or intake hose, hose tools, and a fire hydrant or static water source, so that connections are tight and water flow is unobstructed. <strong>(A) Requisite Knowledge.</strong> Loading and off-loading procedures for mobile water supply apparatus; fire hydrant operation; and suitable static water supply sources, procedures, and protocol for connecting to various water sources. <strong>(B) Requisite Skills.</strong> The ability to hand lay a supply hose, connect and place hard suction hose for drafting operations, deploy portable water tanks as well as the equipment necessary to transfer water between and draft from them, make hydrant-to-pumper hose connections for forward and reverse lays, connect supply hose to a hydrant, and fully open and close the hydrant</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td>5.5.1 Clean and check ladders, ventilation equipment, SCBA, ropes, salvage equipment, and hand tools, given cleaning tools, cleaning supplies, and an assignment, so that equipment is clean and maintained according to manufacturer's or departmental guidelines, maintenance is recorded, and equipment is placed in a ready state or reported otherwise. <strong>(A) Requisite Knowledge.</strong> Types of cleaning methods for various tools and equipment, correct use of cleaning solvents, and manufacturer's or departmental guidelines for cleaning equipment and tools. <strong>(B) Requisite Skills.</strong> The ability to select correct tools for various parts and pieces of equipment, follow guidelines, and complete recording and reporting procedures</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td>5.5.2 Clean, inspect, and return fire hose to service, given washing equipment, water, detergent, tools, and replacement gaskets, so that damage is noted and corrected, the hose is clean, and the equipment is placed in a ready state for service. <strong>(A) Requisite Knowledge.</strong> Departmental procedures for noting a defective hose and removing it from service, cleaning methods, and hose rolls and loads. <strong>(B) Requisite Skills.</strong> The ability to clean different types of hose; operate hose washing and drying equipment; mark defective hose; and replace coupling gaskets, roll hose, and reload hose.</td>
<td>Yes ☐ No ☐</td>
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<tr>
<td>Exterior Operations – Firefighter</td>
<td>Competency Met</td>
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<tr>
<td><strong>Ladders</strong></td>
<td></td>
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<tr>
<td>NFPA 1001 5.3.6, 5.5.1</td>
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</table>

5.3.6* Set up ground ladders, given single and extension ladders, an assignment, and team members if needed, so that hazards are assessed, the ladder is stable, the angle is correct for climbing, extension ladders are extended to the necessary height with the fly locked, the top is placed against a reliable structural component, and the assignment is accomplished.

**(A) Requisite Knowledge.** Parts of a ladder, hazards associated with setting up ladders, what constitutes a stable foundation for ladder placement, different angles for various tasks, safety limits to the degree of angulation, and what constitutes a reliable structural component for top placement.

**(B) Requisite Skills.** The ability to carry ladders, raise ladders, extend ladders and lock flies, determine that a wall and roof will support the ladder, judge extension ladder height requirements, and place the ladder to avoid obvious hazards.

| **5.5.1 Clean and check ladders, ventilation equipment, SCBA, ropes, salvage equipment, and hand tools, given cleaning tools, cleaning supplies, and an assignment, so that equipment is clean and maintained according to manufacturer’s or departmental guidelines, maintenance is recorded, and equipment is placed in a ready state or reported otherwise.** |
|----------------------------------|----------------|
| **(A) Requisite Knowledge.** Types of cleaning methods for various tools and equipment, correct use of cleaning solvents, and manufacturer’s or departmental guidelines for cleaning equipment and tools. |
| **(B) Requisite Skills.** The ability to select correct tools for various parts and pieces of equipment, follow guidelines, and complete recording and reporting procedures. |

<table>
<thead>
<tr>
<th><strong>Rehabilitation Area (REHAB)</strong></th>
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<tr>
<td>NFPA 1001 5.1.1, NFPA 1500, NFPA 1584</td>
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</table>

5.1.1 General Knowledge Requirements. The organization of the fire department; the role of the Fire Fighter I in the organization; the mission of fire service; the fire department’s standard operating procedures (SOPs) and rules and regulations as they apply to the Fire Fighter I; the value of fire and life safety initiatives in support of the fire department mission and to reduce fire fighter line-of-duty injuries and fatalities; the role of other agencies as they relate to the fire department; aspects of the fire department’s member assistance program; the importance of physical fitness and a healthy lifestyle to the performance of the duties of a fire fighter; the critical aspects of NFPA1500, Standard on Fire Department Occupational Safety and Health Program.

<table>
<thead>
<tr>
<th><strong>Introduction to Basic Fire Behavior and Building Construction</strong></th>
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<tbody>
<tr>
<td>NFPA 220, NFPA 921, NFPA 1001 5.3.11, 5.3.12, 5.3.13 NFPA 5000</td>
</tr>
</tbody>
</table>

5.3.11 Perform horizontal ventilation on a structure operating as part of a team, given an assignment, personal protective equipment, ventilation tools, equipment, and ladders, so that the ventilation openings are free of obstructions, tools are used as designed, ladders are correctly placed, ventilation devices are correctly placed, and the structure is cleared of smoke.

**(A) Requisite Knowledge.** The principles, advantages, limitations, and effects of horizontal, mechanical, and hydraulic ventilation; safety considerations when venting a structure; fire behavior in a structure; the products of combustion found in a structure fire; the signs, causes, effects, and prevention of backdrafts; and the relationship of oxygen concentration to life safety and fire growth.

**(B) Requisite Skills.** The ability to transport and operate ventilation tools and equipment and ladders, and to use safe procedures for breaking window and door glass and removing obstructions.
### Exterior Operations – Firefighter

#### 5.3.12 Perform vertical ventilation on a structure as part of a team, given an assignment, personal protective equipment, ground and roof ladders, and tools, so that ladders are positioned for ventilation, a specified opening is created, all ventilation barriers are removed, structural integrity is not compromised, products of combustion are released from the structure, and the team retreats from the area when ventilation is accomplished.

**(A) Requisite Knowledge.** The methods of heat transfer; the principles of thermal layering within a structure on fire; the techniques and safety precautions for venting flat roofs, pitched roofs, and basements; basic indicators of potential collapse or roof failure; the effects of construction type and elapsed time under fire conditions on structural integrity; and the advantages and disadvantages of vertical and trench/strip ventilation.

**(B) Requisite Skills.** The ability to transport and operate ventilation tools and equipment; hoist ventilation tools to a roof; cut roofing and flooring materials to vent flat roofs, pitched roofs, and basements; sound a roof for integrity; clear an opening with hand tools; select, carry, deploy, and secure ground ladders for ventilation activities; deploy roof ladders on pitched roofs while secured to a ground ladder; and carry ventilation-related tools and equipment while ascending and descending ladders.

*Competency Met*

#### 5.3.13 Overhaul a fire scene, given personal protective equipment, attack line, hand tools, a flashlight, and an assignment, so that structural integrity is not compromised, all hidden fires are discovered, fire cause evidence is preserved, and the fire is extinguished.

**(A) Requisite Knowledge.** Types of fire attack lines and water application devices most effective for overhaul, water application methods for extinguishment that limit water damage, types of tools and methods used to expose hidden fire, dangers associated with overhaul, obvious signs of area of origin or signs of arson, and reasons for protection of fire scene.

**(B) Requisite Skills.** The ability to deploy and operate an attack line; remove flooring, ceiling, and wall components to expose void spaces without compromising structural integrity; apply water for maximum effectiveness; expose and extinguish hidden fires in walls, ceilings, and subfloor spaces; recognize and preserve obvious signs of area of origin and arson; and evaluate for complete extinguishment.

*Competency Met*

- **NFPA 220** Standard on Types of Building Construction
  - *Competency Met*
  - Yes □
  - No □

- **NFPA 921** Guide for Fire and Explosion Investigations
  - *Competency Met*
  - Yes □
  - No □

- **NFPA 5000** Building Construction and Safety Code
  - *Competency Met*
  - Yes □
  - No □

**Dangerous Goods or Hazmat Awareness (from NFPA 472)**

- Can utilize any training provider, including internal, that meets the competencies of NFPA 472 – Awareness Level [Playbook: Page 16, note 1]
  - *Competency Met*
  - Yes □
  - No □

**Gas & Electrical Safety for Firefighters (supplied by a BC Utility utilizing an evaluation mechanism)**

- Can utilize any program, developed by a registered Gas or Electrical Utility within the Province of BC, which includes an evaluation instrument based upon current recommended practice [Playbook: Page 16, note 2]
  - *Competency Met*
  - Yes □
  - No □

**Incident Command System 100 (from BCERMS curriculum)**

- Can utilize any training provider, including internal, using certified training and evaluation based upon the BCEMS model. [Playbook: Page 16, note 3]
  - *Competency Met*
  - Yes □
  - No □
<table>
<thead>
<tr>
<th>Interior Operations – Firefighter</th>
<th>Competency Met</th>
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<tbody>
<tr>
<td><strong>All of Exterior Operations Firefighter PLUS the following:</strong></td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td><strong>Organization, Safety and Communications</strong>&lt;br&gt;NFPA 1001 5.2.4</td>
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<tr>
<td><strong>5.2.4</strong> Activate an emergency call for assistance, given vision obscured conditions, PPE, and department SOPs, so that the firefighter can be located and rescued. &lt;br&gt;(A) Requisite Knowledge. Personnel accountability systems, emergency communication procedures, and emergency evacuation methods. &lt;br&gt;(B) Requisite Skills. The ability to initiate an emergency call for assistance in accordance with the AHJ’s procedures, the ability to use other methods of emergency calls for assistance.</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td><strong>RIT Training – pertinent to jurisdictional hazards</strong>&lt;br&gt;NFPA 1001 5.3.9 NFPA 1407, NFPA 1500</td>
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<tr>
<td><strong>5.3.9</strong> Conduct a search and rescue in a structure operating as a member of a team, given an assignment, obscured vision conditions, personal protective equipment, a flashlight, forcible entry tools, hose lines, and ladders when necessary, so that ladders are correctly placed when used, all assigned areas are searched, all victims are located and removed, team integrity is maintained, and team members’ safety — including respiratory protection — is not compromised. &lt;br&gt;(A) Requisite Knowledge. Use of forcible entry tools during rescue operations, ladder operations for rescue, psychological effects of operating in obscured conditions and ways to manage them, methods to determine if an area is tenable, primary and secondary search techniques, team members’ roles and goals, methods to use and indicators of finding victims, victim removal methods (including various carries), and considerations related to respiratory protection. &lt;br&gt;(B) Requisite Skills. The ability to use SCBA to exit through restricted passages, set up and use different types of ladders for various types of rescue operations, rescue a firefighter with functioning respiratory protection, rescue a firefighter whose respiratory protection is not functioning, rescue a person who has no respiratory protection, and assess areas to determine tenability.</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td><strong>Self-Contained Breathing Apparatus</strong>&lt;br&gt;NFPA 1001 5.3.1, 5.3.5, 5.3.9</td>
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<tr>
<td><strong>5.3.1</strong> Use self-contained breathing apparatus (SCBA) during emergency operations, given SCBA and other personal protective equipment, so that the SCBA is correctly donned, the SCBA is correctly worn, controlled breathing techniques are used, emergency procedures are enacted if the SCBA fails, all low-air warnings are recognized, respiratory protection is not intentionally compromised, and hazardous areas are exited prior to air depletion. &lt;br&gt;(A) Requisite Knowledge. Conditions that require respiratory protection, uses and limitations of SCBA, components of SCBA, donning procedures, breathing techniques, indications for and emergency procedures used with SCBA, and physical requirements of the SCBA wearer. &lt;br&gt;(B) Requisite Skills. The ability to control breathing, replace SCBA air cylinders, use SCBA to exit through restricted passages, initiate and complete emergency procedures in the event of SCBA failure or air depletion, and complete donning procedures.</td>
<td>Yes ☐ No ☐</td>
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</table>
### Interior Operations – Firefighter

<table>
<thead>
<tr>
<th>Competency</th>
<th>Met</th>
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</table>
| **5.3.5** Exit a hazardous area as a team, given vision-obscured conditions, so that a safe haven is found before exhausting the air supply, others are not endangered, and the team integrity is maintained.  
(A) Requisite Knowledge. Personnel accountability systems, communication procedures, emergency evacuation methods, what constitutes a safe haven, elements that create or indicate a hazard, and emergency procedures for loss of air supply.  
(B) Requisite Skills. The ability to operate as a team member in vision-obscured conditions, locate and follow a guideline, conserve air supply, and evaluate areas for hazards and identify a safe haven. | Yes ☐ No ☐ |
| **5.3.9** Conduct a search and rescue in a structure operating as a member of a team, given an assignment, obscured vision conditions, personal protective equipment, a flashlight, forcible entry tools, hose lines, and ladders when necessary, so that ladders are correctly placed when used, all assigned areas are searched, all victims are located and removed, team integrity is maintained, and team members' safety — including respiratory protection — is not compromised.  
(A) Requisite Knowledge. Use of forcible entry tools during rescue operations, ladder operations for rescue, psychological effects of operating in obscured conditions and ways to manage them, methods to determine if an area is tenable, primary and secondary search techniques, team members' roles and goals, methods to use and indicators of finding victims, victim removal methods (including various carries), and considerations related to respiratory protection.  
(B)* Requisite Skills. The ability to use SCBA to exit through restricted passages, set up and use different types of ladders for various types of rescue operations, rescue a fire fighter with functioning respiratory protection, rescue a fire fighter whose respiratory protection is not functioning, rescue a person who has no respiratory protection, and assess areas to determine tenability. | Yes ☐ No ☐ |

### Search and Rescue

**NFPA 1001 5.3.9**  

<table>
<thead>
<tr>
<th>Competency</th>
<th>Met</th>
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| **5.3.9** Conduct a search and rescue in a structure operating as a member of a team, given an assignment, obscured vision conditions, personal protective equipment, a flashlight, forcible entry tools, hose lines, and ladders when necessary, so that ladders are correctly placed when used, all assigned areas are searched, all victims are located and removed, team integrity is maintained, and team members' safety — including respiratory protection — is not compromised.  
(A) Requisite Knowledge. Use of forcible entry tools during rescue operations, ladder operations for rescue, psychological effects of operating in obscured conditions and ways to manage them, methods to determine if an area is tenable, primary and secondary search techniques, team members' roles and goals, methods to use and indicators of finding victims, victim removal methods (including various carries), and considerations related to respiratory protection.  
(B)* Requisite Skills. The ability to use SCBA to exit through restricted passages, set up and use different types of ladders for various types of rescue operations, rescue a fire fighter with functioning respiratory protection, rescue a fire fighter whose respiratory protection is not functioning, rescue a person who has no respiratory protection, and assess areas to determine tenability. | Yes ☐ No ☐ |

### Fire Behavior

**NFPA 1001**  

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<tr>
<th>Competency</th>
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<tbody>
<tr>
<td><strong>5.3.9</strong></td>
<td>Yes ☐ No ☐</td>
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<tr>
<td>Interior Operations – Firefighter</td>
<td>Competency Met</td>
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<tr>
<td><strong>Fire Extinguishers</strong></td>
<td></td>
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<tr>
<td>NFPA 1001 5.3.16</td>
<td></td>
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<tr>
<td><strong>5.3.16</strong></td>
<td>Met</td>
</tr>
<tr>
<td>Extinguish incipient Class A, Class B, and Class C fires, given a selection of portable fire extinguishers, so that the correct extinguisher is chosen, the fire is completely extinguished, and correct extinguisher-handling techniques are followed.</td>
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<tr>
<td>(A) <strong>Requisite Knowledge.</strong> The classifications of fire; the types of, rating systems for, and risks associated with each class of fire; and the operating methods of and limitations of portable extinguishers.</td>
<td></td>
</tr>
<tr>
<td>(B) <strong>Requisite Skills.</strong> The ability to operate portable fire extinguishers, approach fire with portable fire extinguishers, select an appropriate extinguisher based on the size and type of fire, and safely carry portable fire extinguishers.</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td><strong>Building Construction</strong></td>
<td></td>
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<tr>
<td>NFPA 1001 5.3.11, 5.3.12</td>
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<tr>
<td><strong>5.3.11</strong></td>
<td>Met</td>
</tr>
<tr>
<td>Perform horizontal ventilation on a structure operating as part of a team, given an assignment, personal protective equipment, ventilation tools, equipment, and ladders, so that the ventilation openings are free of obstructions, tools are used as designed, ladders are correctly placed, ventilation devices are correctly placed, and the structure is cleared of smoke.</td>
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<tr>
<td>(A) <strong>Requisite Knowledge.</strong> The principles, advantages, limitations, and effects of horizontal, mechanical, and hydraulic ventilation; safety considerations when venting a structure; fire behavior in a structure; the products of combustion found in a structure fire; the signs, causes, effects, and prevention of backdrafts; and the relationship of oxygen concentration to life safety and fire growth.</td>
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<tr>
<td>(B) <strong>Requisite Skills.</strong> The ability to transport and operate ventilation tools and equipment and ladders, and to use safe procedures for breaking window and door glass and removing obstructions.</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td><strong>5.3.12</strong></td>
<td>Met</td>
</tr>
<tr>
<td>Perform vertical ventilation on a structure as part of a team, given an assignment, personal protective equipment, ground and roof ladders, and tools, so that ladders are positioned for ventilation, a specified opening is created, all ventilation barriers are removed, structural integrity is not compromised, products of combustion are released from the structure, and the team retreats from the area when ventilation is accomplished.</td>
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<tr>
<td>(A) <strong>Requisite Knowledge.</strong> The methods of heat transfer; the principles of thermal layering within a structure on fire; the techniques and safety precautions for venting flat roofs, pitched roofs, and basements; basic indicators of potential collapse or roof failure; the effects of construction type and elapsed time under fire conditions on structural integrity; and the advantages and disadvantages of vertical and trench/strip ventilation.</td>
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<tr>
<td>(B) <strong>Requisite Skills.</strong> The ability to transport and operate ventilation tools and equipment; hoist ventilation tools to a roof; cut roofing and flooring materials to vent flat roofs, pitched roofs, and basements; sound a roof for integrity; clear an opening with hand tools; select, carry, deploy, and secure ground ladders for ventilation activities; deploy roof ladders on pitched roofs while secured to a ground ladder; and carry ventilation-related tools and equipment while ascending and descending ladders.</td>
<td>Yes ☐ No ☐</td>
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<tr>
<td><strong>Forcible Entry</strong></td>
<td></td>
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<tr>
<td>NFPA 1001 5.3.4</td>
<td></td>
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<tr>
<td><strong>5.3.4</strong></td>
<td>Met</td>
</tr>
<tr>
<td>Force entry into a structure, given personal protective equipment, tools, and an assignment, so that the tools are used as designed, the barrier is removed, and the opening is in a safe condition and ready for entry.</td>
<td></td>
</tr>
<tr>
<td>(A) <strong>Requisite Knowledge.</strong> Basic construction of typical doors, windows, and walls within the department’s community or service area; operation of doors, windows, and locks; and the dangers associated with forcing entry through doors, windows, and walls.</td>
<td></td>
</tr>
<tr>
<td>(B) <strong>Requisite Skills.</strong> The ability to transport and operate hand and power tools and to force entry through doors, windows, and walls using assorted methods and tools.</td>
<td>Yes ☐ No ☐</td>
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### Interior Operations – Firefighter

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<th>Competency Met</th>
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<td>Yes</td>
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#### Ventilation

**NFPA 1001 5.3.12**

**5.3.12** Perform vertical ventilation on a structure as part of a team, given an assignment, personal protective equipment, ground and roof ladders, and tools, so that ladders are positioned for ventilation, a specified opening is created, all ventilation barriers are removed, structural integrity is not compromised, products of combustion are released from the structure, and the team retreats from the area when ventilation is accomplished.

**(A) Requisite Knowledge.** The methods of heat transfer; the principles of thermal layering within a structure on fire; the techniques and safety precautions for venting flat roofs, pitched roofs, and basements; basic indicators of potential collapse or roof failure; the effects of construction type and elapsed time under fire conditions on structural integrity; and the advantages and disadvantages of vertical and trench/strip ventilation.

**(B) Requisite Skills.** The ability to transport and operate ventilation tools and equipment; hoist ventilation tools to a roof; cut roofing and flooring materials to vent flat roofs, pitched roofs, and basements; sound a roof for integrity; clear an opening with hand tools; select, carry, deploy, and secure ground ladders for ventilation activities; deploy roof ladders on pitched roofs while secured to a ground ladder; and carry ventilation-related tools and equipment while ascending and descending ladders.

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#### Loss Control

**NFPA 1001 5.3.13, 5.3.14**

**5.3.13** Overhaul a fire scene, given personal protective equipment, attack line, hand tools, a flashlight, and an assignment, so that structural integrity is not compromised, all hidden fires are discovered, fire cause evidence is preserved, and the fire is extinguished.

**(A) Requisite Knowledge.** Types of fire attack lines and water application devices most effective for overhaul, water application methods for extinguishment that limit water damage, types of tools and methods used to expose hidden fire, dangers associated with overhaul, obvious signs of area of origin or signs of arson, and reasons for protection of fire scene.

**(B) Requisite Skills.** The ability to deploy and operate an attack line; remove flooring, ceiling, and wall components to expose void spaces without compromising structural integrity; apply water for maximum effectiveness; expose and extinguish hidden fires in walls, ceilings, and subfloor spaces; recognize and preserve obvious signs of area of origin and arson; and evaluate for complete extinguishment.

**5.3.14** Conserve property as a member of a team, given salvage tools and equipment and an assignment, so that the building and its contents are protected from further damage.

**(A) Requisite Knowledge.** The purpose of property conservation and its value to the public, methods used to protect property, types of and uses for salvage covers, operations at properties protected with automatic sprinklers, how to stop the flow of water from an automatic sprinkler head, identification of the main control valve on an automatic sprinkler system, forcible entry issues related to salvage, and procedures for protecting possible areas of origin and potential evidence.

**(B) Requisite Skills.** The ability to cluster furniture; deploy covering materials; roll and fold salvage covers for reuse; construct water chutes and catch-alls; remove water; cover building openings, including doors, windows, floor openings, and roof openings; separate, remove, and relocate charred material to a safe location while protecting the area of origin for cause determination; stop the flow of water from a sprinkler with sprinkler wedges or stoppers; and operate a main control valve on an automatic sprinkler system.
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<tr>
<th>Competency Met</th>
<th>Interior Operations – Firefighter</th>
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<tr>
<td>5.3.7* Attack a passenger vehicle fire operating as a member of a team, given personal protective equipment, attack line, and hand tools, so that hazards are avoided, leaking flammable liquids are identified and controlled, protection from flash fires is maintained, all vehicle compartments are overhauled, and the fire is extinguished. <strong>(A) Requisite Knowledge.</strong> Principles of fire streams as they relate to fighting automobile fires; precautions to be followed when advancing hose lines toward an automobile; observable results that a fire stream has been properly applied; identifying alternative fuels and the hazards associated with them; dangerous conditions created during an automobile fire; common types of accidents or injuries related to fighting automobile fires and how to avoid them; how to access locked passenger, trunk, and engine compartments; and methods for overhauling an automobile. <strong>(B) Requisite Skills.</strong> The ability to identify automobile fuel type; assess and control fuel leaks; open, close, and adjust the flow and pattern on nozzles; apply water for maximum effectiveness while maintaining flash fire protection; advance 11⁄2 in. (38 mm) or larger diameter attack lines; and expose hidden fires by opening all automobile compartments.</td>
<td>Yes ☑ No ☐</td>
<td></td>
</tr>
<tr>
<td>Interior Operations – Firefighter</td>
<td>Competency Met</td>
<td></td>
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<tr>
<td>----------------------------------</td>
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</tbody>
</table>
| **5.3.10** Attack an interior structure fire operating as a member of a team, given an attack line, ladders when needed, personal protective equipment, tools, and an assignment, so that team integrity is maintained, the attack line is deployed for advancement, ladders are correctly placed when used, access is gained into the fire area, effective water application practices are used, the fire is approached correctly, attack techniques facilitate suppression given the level of the fire, hidden fires are located and controlled, the correct body posture is maintained, hazards are recognized and managed, and the fire is brought under control.  
(A) Requisite Knowledge. Principles of fire streams; types, design, operation, nozzle pressure effects, and flow capabilities of nozzles; precautions to be followed when advancing hose lines to a fire; observable results that a fire stream has been properly applied; dangerous building conditions created by fire; principles of exposure protection; potential long-term consequences of exposure to products of combustion; physical states of matter in which fuels are found; common types of accidents or injuries and their causes; and the application of each size and type of attack line, the role of the backup team in fire attack situations, attack and control techniques for grade level and above and below grade levels, and exposing hidden fires.  
(B) Requisite Skills. The ability to prevent water hammers when shutting down nozzles; open, close, and adjust nozzle flow and patterns; apply water using direct, indirect, and combination attacks; advance charged and uncharged \( \frac{1}{2} \) in. (38 mm) diameter or larger hose lines up ladders and up and down interior and exterior stairways; extend hose lines; replace burst hose sections; operate charged hose lines of \( \frac{1}{2} \) in. (38 mm) diameter or larger while secured to a ground ladder; couple and uncouple various handline connections; carry hose; attack fires at grade level and above and below grade levels; and locate and suppress interior wall and subfloor fires. | Yes □  
No □ |
| **5.3.19** Combat a ground cover fire operating as a member of a team, given protective clothing, SCBA (if needed), hose lines, extinguishers or hand tools, and an assignment, so that threats to property are reported, threats to personal safety are recognized, retreat is quickly accomplished when warranted, and the assignment is completed.  
(A) Requisite Knowledge. Types of ground cover fires, parts of ground cover fires, methods to contain or suppress, and safety principles and practices.  
(B) Requisite Skills. The ability to determine exposure threats based on fire spread potential, protect exposures, construct a fire line or extinguish with hand tools, maintain integrity of established fire lines, and suppress ground cover fires using water. | Yes □  
No □ |
### Full Service Operations – Firefighter

<table>
<thead>
<tr>
<th>Competency</th>
<th>Met</th>
</tr>
</thead>
<tbody>
<tr>
<td>All of NFPA 1001 – FF2 Competencies (except Hazmat and Medical Response) and with the addition of:</td>
<td></td>
</tr>
<tr>
<td>Live Fire Exterior and Interior</td>
<td>Yes</td>
</tr>
<tr>
<td>Hazmat Operations <em>(NFPA core competencies plus 6.6.1.1.2)</em></td>
<td>Yes</td>
</tr>
</tbody>
</table>

**6.6.1.1.2** The operations level responder assigned to perform product control at hazardous materials/WMD incidents shall be trained to meet all competencies at the awareness level *(see Chapter 4)*, all core competencies at the operations level *(see Chapter 5)*, all mission-specific competencies for personal protective equipment *(see Section 6.2)*, and all competencies in this section.
<table>
<thead>
<tr>
<th>Team Leader</th>
<th>Competency Met</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exterior &amp; Interior</td>
<td></td>
</tr>
<tr>
<td>• Can utilize any training provider, including internal, that meets the competencies of NFPA 1021 – Fire Officer Professional Qualifications [Playbook: Page 16, note 3]</td>
<td>Yes ☐ No ☐</td>
</tr>
</tbody>
</table>

Completion of the Operational Firefighter requirements for either the Exterior or Interior Service Level PLUS the following Competencies from NFPA 1021:

<table>
<thead>
<tr>
<th>Incident Command and Fire Attack</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NFPA 1021 4.1.1, 4.2.1, 4.2.2, 4.2.3</td>
<td></td>
</tr>
</tbody>
</table>

4.1.1* General Prerequisite Knowledge. The organizational structure of the department; geographical configuration and characteristics of response districts; departmental operating procedures for administration, emergency operations, incident management system and safety; fundamentals of leadership; departmental budget process; information management and recordkeeping; the fire prevention and building safety codes and ordinances applicable to the jurisdiction; current trends, technologies, and socioeconomic and political factors that affect the fire service; cultural diversity; methods used by supervisors to obtain cooperation within a group of subordinates; the rights of management and members; agreements in force between the organization and members; generally accepted ethical practices, including a professional code of ethics; and policies and procedures regarding the operation of the department as they involve supervisors and members.

<table>
<thead>
<tr>
<th>4.2.1 Assign tasks or responsibilities to unit members, given an assignment at an emergency incident, so that the instructions are complete, clear, and concise; safety considerations are addressed; and the desired outcomes are conveyed.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) Requisite Knowledge. Verbal communications during emergency incidents, techniques used to make assignments under stressful situations, and methods of confirming understanding.</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td>(B) Requisite Skills. The ability to condense instructions for frequently assigned unit tasks based on training and standard operating procedures.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.2.2 Assign tasks or responsibilities to unit members, given an assignment under nonemergency conditions at a station or other work location, so that the instructions are complete, clear, and concise; safety considerations are addressed; and the desired outcomes are conveyed.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) Requisite Knowledge. Verbal communications under nonemergency situations, techniques used to make assignments under routine situations, and methods of confirming understanding.</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td>(B) Requisite Skills. The ability to issue instructions for frequently assigned unit tasks based on department policy.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4.2.3 Direct unit members during a training evolution, given a company training evolution and training policies and procedures, so that the evolution is performed in accordance with safety plans, efficiently, and as directed.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) Requisite Knowledge. Verbal communication techniques to facilitate learning.</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td>(B) Requisite Skills. The ability to distribute issue-guided directions to unit members during training evolutions.</td>
<td></td>
</tr>
</tbody>
</table>
### Team Leader
#### Exterior & Interior

<table>
<thead>
<tr>
<th>Competency Met</th>
</tr>
</thead>
</table>

| Pre-Incident Planning, Size-up and Incident Action Planning  
NFPA 1021 4.5.2, 4.5.3, 4.6, 4.6.1, 4.6.2 |

**4.5.2** Identify construction, alarm, detection, and suppression features that contribute to or prevent the spread of fire, heat, and smoke throughout the building or from one building to another, given an occupancy, and the policies and forms of the AHJ so that a pre-incident plan for any of the following occupancies is developed:

1. Public assembly  
2. Educational  
3. Institutional  
4. Residential  
5. Business  
6. Industrial  
7. Manufacturing  
8. Storage  
9. Mercantile  
10. Special properties  

**A Requisite Knowledge.** Fire behavior; building construction; inspection and incident reports; detection, alarm, and suppression systems; and applicable codes, ordinances, and standards.  

**B Requisite Skills.** The ability to use evaluative methods and to communicate orally and in writing.  

**4.5.3** Secure an incident scene, given rope or barrier tape, so that unauthorized persons can recognize the perimeters of the scene and are kept from restricted areas, and all evidence or potential evidence is protected from damage or destruction.

**A Requisite Knowledge.** Types of evidence, the importance of fire scene security, and evidence preservation.  

**B Requisite Skills.** The ability to establish perimeters at an incident scene.

**4.6** Emergency Service Delivery. This duty involves supervising emergency operations, conducting pre-incident planning, and deploying assigned resources in accordance with the local emergency plan and according to the following job performance requirements.

**4.6.1** Develop an initial action plan, given size-up information for an incident and assigned emergency response resources, so that resources are deployed to control the emergency.

**A Requisite Knowledge.** Elements of a size-up, standard operating procedures for emergency operations, and fire behavior.  

**B Requisite Skills.** The ability to analyze emergency scene conditions; to activate the local emergency plan, including localized evacuation procedures; to allocate resources; and to communicate orally.

**4.6.2** Implement an action plan at an emergency operation, given assigned resources, type of incident, and a preliminary plan, so that resources are deployed to mitigate the situation.

**A Requisite Knowledge.** Standard operating procedures, resources available for the mitigation of fire and other emergency incidents, an incident management system, scene safety, and a personnel accountability system.  

**B Requisite Skills.** The ability to implement an incident management system, to communicate orally, to manage scene safety, and to supervise and account for assigned personnel under emergency conditions.

**Fire Ground Accountability**  
NFPA 1021 4.6.1, 4.6.2

**4.6.1** Develop an initial action plan, given size-up information for an incident and assigned emergency response resources, so that resources are deployed to control the emergency.

**A Requisite Knowledge.** Elements of a size-up, standard operating procedures for emergency operations, and fire behavior.  

**B Requisite Skills.** The ability to analyze emergency scene conditions; to activate the local emergency plan, including localized evacuation procedures; to allocate resources; and to communicate orally.
<table>
<thead>
<tr>
<th>Competency</th>
<th>Met</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.6.2* Implement an action plan at an emergency operation, given assigned resources, type of incident, and a preliminary plan, so that resources are deployed to mitigate the situation. <strong>(A) Requisite Knowledge.</strong> Standard operating procedures, resources available for the mitigation of fire and other emergency incidents, an incident management system, scene safety, and a personnel accountability system. <strong>(B) Requisite Skills.</strong> The ability to implement an incident management system, to communicate orally, to manage scene safety, and to supervise and account for assigned personnel under emergency conditions.</td>
<td>Yes  ☐  No  ☐</td>
</tr>
<tr>
<td><strong>Live Fire – Exterior (Recommended for Exterior Operations)</strong> NFPA 1001 5.3.7, 5.3.8, 5.3.10</td>
<td></td>
</tr>
<tr>
<td>5.3.7* Attack a passenger vehicle fire operating as a member of a team, given personal protective equipment, attack line, and hand tools, so that hazards are avoided, leaking flammable liquids are identified and controlled, protection from flash fires is maintained, all vehicle compartments are overhauled, and the fire is extinguished. <strong>(A) Requisite Knowledge.</strong> Principles of fire streams as they relate to fighting automobile fires; precautions to be followed when advancing hose lines toward an automobile; observable results that a fire stream has been properly applied; identifying alternative fuels and the hazards associated with them; dangerous conditions created during an automobile fire; common types of accidents or injuries related to fighting automobile fires and how to avoid them; how to access locked passenger, trunk, and engine compartments; and methods for overhauling an automobile. <strong>(B) Requisite Skills.</strong> The ability to identify automobile fuel type; assess and control fuel leaks; open, close, and adjust the flow and pattern on nozzles; apply water for maximum effectiveness while maintaining flash fire protection; advance 1.12 in. (38 mm) or larger diameter attack lines; and expose hidden fires by opening all automobile compartments.</td>
<td>Yes  ☐  No  ☐</td>
</tr>
<tr>
<td>5.3.8* Extinguish fires in exterior Class A materials, given fires in stacked or piled and small unattached structures or storage containers that can be fought from the exterior, attack lines, hand tools and master stream devices, and an assignment, so that exposures are protected, the spread of fire is stopped, collapse hazards are avoided, water application is effective, the fire is extinguished, and signs of the origin area(s) and arson are preserved. <strong>(A) Requisite Knowledge.</strong> Types of attack lines and water streams appropriate for attacking stacked, piled materials and outdoor fires; dangers — such as collapse — associated with stacked and piled materials; various extinguishing agents and their effect on different material configurations; tools and methods to use in breaking up various types of materials; the difficulties related to complete extinguishment of stacked and piled materials; water application methods for exposure protection and fire extinguishment; dangers such as exposure to toxic or hazardous materials associated with storage building and container fires; obvious signs of origin and cause; and techniques for the preservation of fire cause evidence. <strong>(B) Requisite Skills.</strong> The ability to recognize inherent hazards related to the material's configuration, operate handlines or master streams, break up material using hand tools and water streams, evaluate for complete extinguishment, operate hose lines and other water application devices, evaluate and modify water application for maximum penetration, search for and expose hidden fires, assess patterns for origin determination, and evaluate for complete extinguishment.</td>
<td>Yes  ☐  No  ☐</td>
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</table>
### Team Leader

**Exterior & Interior**

<table>
<thead>
<tr>
<th>Competency Met</th>
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<tbody>
<tr>
<td>Yes ☐</td>
</tr>
<tr>
<td>No ☐</td>
</tr>
</tbody>
</table>

| 5.3.10* Attack an interior structure fire operating as a member of a team, given an attack line, ladders when needed, personal protective equipment, tools, and an assignment, so that team integrity is maintained, the attack line is deployed for advancement, ladders are correctly placed when used, access is gained into the fire area, effective water application practices are used, the fire is approached correctly, attack techniques facilitate suppression given the level of the fire, hidden fires are located and controlled, the correct body posture is maintained, hazards are recognized and managed, and the fire is brought under control. **(A) Requisite Knowledge.** Principles of fire streams; types, design, operation, nozzle pressure effects, and flow capabilities of nozzles; precautions to be followed when advancing hose lines to a fire; observable results that a fire stream has been properly applied; dangerous building conditions created by fire; principles of exposure protection; potential longterm consequences of exposure to products of combustion; physical states of matter in which fuels are found; common types of accidents or injuries and their causes; and the application of each size and type of attack line, the role of the backup team in fire attack situations, attack and control techniques for grade level and above and below grade levels, and exposing hidden fires. **(B) Requisite Skills.** The ability to prevent water hammers when shutting down nozzles; open, close, and adjust nozzle flow and patterns; apply water using direct, indirect, and combination attacks; advance charged and uncharged 1 1/2 in. (38 mm) diameter or larger hose lines up ladders and up and down interior and exterior stairways; extend hose lines; replace burst hose sections; operate charged hose lines of 1 1/2 in. (38 mm) diameter or larger while secured to a ground ladder; couple and uncouple various handline connections; carry hose; attack fires at grade level and above and below grade levels; and locate and suppress interior wall and subfloor fires. | Yes ☐          |
| No ☐           |

<p>| Live Fire – Exterior &amp; Interior <em>(Recommended for Interior Operations)</em> | Yes ☐          |
| No ☐           |</p>
<table>
<thead>
<tr>
<th>Risk Management Officer</th>
<th>Competency Met</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completion of the Team Leader requirements for the Exterior Operations level PLUS the following courses (1 from each area):</td>
<td>Yes □ No □</td>
</tr>
<tr>
<td>Incident Action Planning NFPA 1021 4.6.1, 4.6.2</td>
<td></td>
</tr>
<tr>
<td>EITHER</td>
<td></td>
</tr>
<tr>
<td>Incident Safety Officer NFPA 1521 6.1 – 6.7.2 (operational)</td>
<td>Yes □ No □</td>
</tr>
</tbody>
</table>

### Incident Action Planning NFPA 1021 4.6.1, 4.6.2

- Requires a training program with subject matter covering areas such as strategies and tactics, fire ground command and emergency scene management [Playbook: Page 16, note 5]

#### 4.6.1

Develop an initial action plan, given size-up information for an incident and assigned emergency response resources, so that resources are deployed to control the emergency.

**(A)** Requisite Knowledge. Elements of a size-up, standard operating procedures for emergency operations, and fire behavior.

**(B)** Requisite Skills. The ability to analyze emergency scene conditions; to activate the local emergency plan, including localized evacuation procedures; to allocate resources; and to communicate orally.

#### 4.6.2

- Implement an action plan at an emergency operation, given assigned resources, type of incident, and a preliminary plan, so that resources are deployed to mitigate the situation.

**(A)** Requisite Knowledge. Standard operating procedures, resources available for the mitigation of fire and other emergency incidents, an incident management system, scene safety, and a personnel accountability system.

**(B)** Requisite Skills. The ability to implement an incident management system, to communicate orally, to manage scene safety, and to supervise and account for assigned personnel under emergency conditions.

### OR Incident Safety Officer NFPA 1521 6.1 – 6.7.2 (operational)

#### 6.1 General Functions of the Incident Safety Officer.

- **6.1.1** The incident safety officer (ISO) shall be integrated with the incident management system (IMS) as a command staff member, as specified in NFPA 1561, Standard on Emergency Services Incident Management System.

- **6.1.2** Standard operating procedures (SOPs) shall define criteria for the response of a predesignated incident safety officer.

- **6.1.2.1** If the incident safety officer is designated by the incident commander, the fire department shall establish criteria for appointment based upon 6.1.1.

- **6.1.3** The incident safety officer and assistant incident safety officer(s) shall be readily identifiable at the incident scene.

- **6.1.4** Upon arrival or assignment as the incident safety officer at an incident, he or she shall obtain a situation-status briefing from the incident commander; that includes the incident action plan.

- **6.1.5** The incident safety officer shall monitor the incident action plan, conditions, activities, and operations to determine whether they fall within the criteria as defined in the fire department’s risk management plan.

- **6.1.6** When the perceived risk(s) is not within the fire department’s risk management criteria, the incident safety officer shall take action as outlined in Section 4.6.

- **6.1.7** The incident safety officer shall monitor the incident scene and report to the incident commander the status of conditions, hazards, and risks.

- **6.1.8** The incident safety officer shall ensure that the fire department’s personnel accountability system is being utilized.
### Risk Management Officer

| Competency Met |  
|----------------|---

| **6.1.9** | The incident safety officer shall offer judgment to the incident commander on establishing control zones and no entry zones and ensure that established zones are communicated to all members present on the scene. |
| **6.1.10** | The incident safety officer shall evaluate motor vehicle incident scene traffic hazards and apparatus placement and take appropriate actions to mitigate hazards as described in Section 8.7 of NFPA 1500, Standard on Fire Department Occupational Safety and Health Program. |
| **6.1.11** | The incident safety officer shall offer judgment to the incident commander on establishing control zones and no entry zones and ensure that established zones are communicated to all members present on the scene. |
| **6.1.12** | The incident safety officer shall ensure that the incident commander establishes an incident scene rehabilitation tactical level management component during emergency operations. |
| **6.1.13** | The incident safety officer shall communicate to the incident commander the need for assistant incident safety officers and/or technical specialists due to the need, size, complexity, or duration of the incident. |
| **6.1.14** | The incident safety officer or assistant incident safety officer shall survey and evaluate the hazards associated with the designation of a landing zone and interface with helicopters. |
| **6.1.15** | The incident safety officer shall recognize the potential need for critical incident stress interventions and notify the incident commander of this possibility. |
| **6.1.16** | If the incident safety officer or an assistant safety officer needs to enter a hot zone or an environment that is immediately dangerous to life or health (IDLH), the incident safety officer or assistant safety officer shall be paired up with another member and check in with the entry control officer. |

| **6.2** | Fire Suppression. |
| **6.2.1** | The incident safety officer shall meet the provisions of Section 6.2 during fire suppression operations. |
| **6.2.2** | The incident safety officer shall ensure that a rapid intervention team meeting the criteria in Chapter 8 of NFPA 1500, is available and ready for deployment. |
| **6.2.3** | Where fire has involved a building(s) the incident safety officer shall advise the incident commander of hazards, collapse potential, and any fire extension in such building(s). |
| **6.2.4** | The incident safety officer shall evaluate visible smoke and fire conditions and advise the incident commander, tactical level management component’s (TLMC) officers, and company officers on the potential for flashover, backdraft, blow-up, or other events that could pose a threat to operating teams. |
| **6.2.5** | The incident safety officer shall monitor the accessibility of entry and egress of structures and its effect on the safety of members conducting interior operations. |

| **6.3** | Emergency Medical Service Operations. |
| **6.3.1** | The incident safety officer shall meet the provisions of Section 6.3 during emergency medical service (EMS) operations. |
| **6.3.2** | The incident safety officer shall ensure compliance with the department’s infection control plan and NFPA 1581, Standard on Fire Department Infection Control Program, during emergency medical service operations. |
| **6.3.3** | The incident safety officer shall ensure that incident scene rehabilitation and critical incident stress management are established as needed at emergency medical service operations, especially mass casualty incidents (MCIs). |

| **6.4** | Technical Rescue. |
| **6.4.1** | The incident safety officer shall meet the provisions of Section 6.4 during technical rescue operations. |
| **6.4.2** | In cases where a designated incident safety officer does not meet the technician-level requirements of NFPA 1006, Standard for Rescue Technician Professional Qualifications, the
<table>
<thead>
<tr>
<th>Risk Management Officer</th>
<th>Competency Met</th>
</tr>
</thead>
<tbody>
<tr>
<td>incident commander shall appoint an assistant incident safety officer or a technical specialist who meets the technician-level requirements of NFPA 1006 to assist with incident safety officer functions.</td>
<td>Met</td>
</tr>
</tbody>
</table>

**6.4.3** The incident safety officer shall attend strategic and tactical planning sessions and provide input on risk assessment and member safety.

**6.4.4** The incident safety officer shall ensure that a safety briefing is conducted and that an incident action plan and an incident safety plan are developed and made available to all members on the scene.

**6.5 Hazardous Materials Operations.**

**6.5.1** The incident safety officer shall meet the provisions of Section 6.5 during hazardous materials operations.

**6.5.2** In cases where a designated incident safety officer does not meet the technician-level requirements of NFPA 472, *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents*, the incident commander shall appoint an assistant incident safety officer or a technical specialist who meets the technician-level requirements of NFPA 472 to assist with incident safety officer functions.

**6.5.3** The incident safety officer shall attend strategic and tactical planning sessions and provide input on risk assessment and member safety.

**6.5.4** The incident safety officer shall ensure that a safety briefing is conducted and that an incident action plan and an incident safety plan are developed and made available to all members on the scene.

**6.5.5** The incident safety officer shall ensure that control zones are clearly marked and communicated to all members.

**6.6 Accident Investigation and Review.**

**6.6.1** Upon notification of a member injury, illness, or exposure, the incident safety officer shall immediately communicate this information to the incident commander to ensure that emergency medical care is provided.

**6.6.2** The incident safety officer shall initiate the accident investigation procedures as required by the fire department.

**6.6.3** In the event of a serious injury, fatality, or other potentially harmful occurrence to a member, the incident safety officer shall request assistance from the health and safety officer.

**6.7 Post-Incident Analysis.**

**6.7.1** The incident safety officer shall prepare a written report for the post-incident analysis that includes pertinent information about the incident relating to health and safety issues.

**6.7.2** The incident safety officer shall participate in the post incident analysis.

**EITHER**

1. **FCABC/LGMA: Effective Fire Service Administration**
   - Yes ☐
   - No ☐

2. **Beyond Hoses and Helmets, or equivalent (administrative)**
   - Yes ☐
   - No ☐
<table>
<thead>
<tr>
<th><strong>Company Fire Officer</strong></th>
<th><strong>Competency Met</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Officer 1 (NFPA 1021 in its entirety)</td>
<td>Yes [ ] No [ ]</td>
</tr>
<tr>
<td>Incident Command 200</td>
<td>Yes [ ] No [ ]</td>
</tr>
<tr>
<td>Fire Service Instructor 1 (NFPA 1041 Chapter 4)</td>
<td>Yes [ ] No [ ]</td>
</tr>
</tbody>
</table>

### 4.1 General.
#### 4.1.1 The Fire Service Instructor I shall meet the JPRs defined in Sections 4.2 through 4.5 of this standard.

### 4.2 Program Management.
#### 4.2.1 Definition of Duty. The management of basic resources and the records and reports essential to the instructional process.

#### 4.2.2 Assemble course materials, given a specific topic, so that the lesson plan and all materials, resources, and equipment needed to deliver the lesson are obtained.
**(A) Requisite Knowledge.** Components of a lesson plan, policies and procedures for the procurement of materials and equipment, and resource availability.

**(B) Requisite Skills.** None required.

#### 4.2.3 Prepare requests for resources, given training goals and current resources, so that the resources required to meet training goals are identified and documented.
**(A) Requisite Knowledge.** Resource management, sources of instructional resources and equipment.

**(B) Requisite Skills.** Oral and written communication, forms completion.

#### 4.2.4 Schedule single instructional sessions, given a training assignment, department scheduling procedures, instructional resources, facilities and timeline for delivery, so that the specified sessions are delivered according to department procedure.
**(A) Requisite Knowledge.** Departmental scheduling procedures and resource management.

**(B) Requisite Skills.** Training schedule completion.

#### 4.2.5 Complete training records and report forms, given policies and procedures and forms, so that required reports are accurate and submitted in accordance with the procedures.
**(A) Requisite Knowledge.** Types of records and reports required, and policies and procedures for processing records and reports.

**(B) Requisite Skills.** Basic report writing and record completion.

### 4.3 Instructional Development.
#### 4.3.1 * Definition of Duty. The review and adaptation of prepared instructional materials.

#### 4.3.2 * Review instructional materials, given the materials for a specific topic, target audience, and learning environment, so that elements of the lesson plan, learning environment, and resources that need adaptation are identified.
**(A) Requisite Knowledge.** Recognition of student limitations and cultural diversity, methods of instruction, types of resource materials, organization of the learning environment, and policies and procedures.

**(B) Requisite Skills.** Analysis of resources, facilities, and materials.

#### 4.3.3 * Adapt a prepared lesson plan, given course materials and an assignment, so that the needs of the student and the objectives of the lesson plan are achieved.
**(A)* Requisite Knowledge.** Elements of a lesson plan, selection of instructional aids and methods, and organization of the learning environment.

**(B) Requisite Skills.** Instructor preparation and organizational skills.

### 4.4 Instructional Delivery.
#### 4.4.1 Definition of Duty. The delivery of instructional sessions utilizing prepared course materials.
<table>
<thead>
<tr>
<th></th>
<th>Company Fire Officer</th>
<th>Competency Met</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.4.2</td>
<td>Organize the classroom, laboratory, or outdoor learning environment, given a facility and an assignment, so that lighting, distractions, climate control or weather, noise control, seating, audiovisual equipment, teaching aids, and safety are considered.</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td><strong>(A) Requisite Knowledge.</strong> Classroom management and safety, advantages and limitations of audiovisual equipment and teaching aids, classroom arrangement, and methods and techniques of instruction.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>(B) Requisite Skills.</strong> Use of instructional media and teaching aids</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.4.3</td>
<td>Present prepared lessons, given a prepared lesson plan that specifies the presentation method(s), so that the method(s) indicated in the plan are used and the stated objectives or learning outcomes are achieved, applicable safety standards and practices are followed, and risks are addressed.</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td><em><em>(A)</em> Requisite Knowledge.</em>* The laws and principles of learning, methods and techniques of instruction, lesson plan components and elements of the communication process, and lesson plan terminology and definitions; the impact of cultural differences on instructional delivery; safety rules, regulations, and practices; identification of training hazards; elements and limitations of distance learning; distance learning delivery methods; and the instructor's role in distance learning.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>(B) Requisite Skills.</strong> Oral communication techniques, methods and techniques of instruction, and utilization of lesson plans in an instructional setting.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.4.4*</td>
<td>Adjust presentation, given a lesson plan and changing circumstances in the class environment, so that class continuity and the objectives or learning outcomes are achieved.</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td><strong>(A) Requisite Knowledge.</strong> Methods of dealing with changing circumstances.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>(B) Requisite Skills.</strong> None required.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.4.5*</td>
<td>Adjust to differences in learning styles, abilities, cultures, and behaviors, given the instructional environment, so that lesson objectives are accomplished, disruptive behavior is addressed, and a safe and positive learning environment is maintained.</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td><em><em>(A)</em> Requisite Knowledge.</em>* Motivation techniques, learning styles, types of learning disabilities and methods for dealing with them, and methods of dealing with disruptive and unsafe behavior.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>(B) Requisite Skills.</strong> Basic coaching and motivational techniques, correction of disruptive behaviors, and adaptation of lesson plans or materials to specific instructional situations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.4.6</td>
<td>Operate audiovisual equipment and demonstration devices, given a learning environment and equipment, so that the equipment functions properly.</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td><strong>(A) Requisite Knowledge.</strong> Components of audiovisual equipment.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>(B) Requisite Skills.</strong> Use of audiovisual equipment, cleaning, and field level maintenance.</td>
<td></td>
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<tr>
<td>4.4.7</td>
<td>Utilize audiovisual materials, given prepared topical media and equipment, so that the intended objectives are clearly presented, transitions between media and other parts of the presentation are smooth, and media are returned to storage.</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td><strong>(A) Requisite Knowledge.</strong> Media types, limitations, and selection criteria.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>(B) Requisite Skills.</strong> Transition techniques within and between media.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.5 Evaluation and Testing.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.5.1* Definition of Duty.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.5.2</td>
<td>Administer oral, written, and performance tests, given the lesson plan, evaluation instruments, and evaluation procedures of the agency, so that bias or discrimination is eliminated, the testing is conducted according to procedures, and the security of the materials is maintained.</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td><strong>(A) Requisite Knowledge.</strong> Test administration, agency policies, laws and policies pertaining to discrimination during training and testing, methods for eliminating testing bias, laws affecting records and disclosure of training information, purposes of evaluation and testing, and performance skills evaluation.</td>
<td></td>
<td></td>
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<tr>
<td><strong>(B) Requisite Skills.</strong> Use of skills checklists and oral questioning techniques.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.5.3</td>
<td>Grade student oral, written, or performance tests, given class answer sheets or skills checklists and appropriate answer keys, so the examinations are accurately graded and properly secured.</td>
<td>Yes ☐ No ☐</td>
</tr>
<tr>
<td><strong>(A) Requisite Knowledge.</strong> Grading methods, methods for eliminating bias during grading, and maintaining confidentiality of scores.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>(B) Requisite Skills.</strong> None required.</td>
<td></td>
<td></td>
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<tr>
<td>Company Fire Officer</td>
<td>Competency Met</td>
<td></td>
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<tr>
<td>----------------------</td>
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</tr>
<tr>
<td><strong>4.5.4</strong> Report test results, given a set of test answer sheets or skills checklists, a report form, and policies and procedures for reporting, so that the results are accurately recorded, the forms are forwarded according to procedure, and unusual circumstances are reported. <strong>(A) Requisite Knowledge.</strong> Reporting procedures and the interpretation of test results. <strong>(B) Requisite Skills.</strong> Communication skills and basic coaching.</td>
<td>Yes ☐ No ☐</td>
<td></td>
</tr>
<tr>
<td><strong>4.5.5</strong> Provide evaluation feedback to students, given evaluation data, so that the feedback is timely; specific enough for the student to make efforts to modify behavior; and objective, clear, and relevant; also include suggestions based on the data. <strong>(A) Requisite Knowledge.</strong> Reporting procedures and the interpretation of test results. <strong>(B) Requisite Skills.</strong> Communication skills and basic coaching.</td>
<td>Yes ☐ No ☐</td>
<td></td>
</tr>
<tr>
<td><strong>Emergency Scene Management (4.6.1, 4.6.2)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4.6.1</strong> Develop an initial action plan, given size-up information for an incident and assigned emergency response resources, so that resources are deployed to control the emergency. <em><em>(A)</em> Requisite Knowledge.</em>* Elements of a size-up, standard operating procedures for emergency operations, and fire behavior. <em><em>(B)</em> Requisite Skills.</em>* The ability to analyze emergency scene conditions; to activate the local emergency plan, including localized evacuation procedures; to allocate resources; and to communicate orally.</td>
<td>Yes ☐ No ☐</td>
<td></td>
</tr>
<tr>
<td><strong>4.6.2</strong> Implement an action plan at an emergency operation, given assigned resources, type of incident, and a preliminary plan, so that resources are deployed to mitigate the situation. <strong>(A) Requisite Knowledge.</strong> Standard operating procedures, resources available for the mitigation of fire and other emergency incidents, an incident management system, scene safety, and a personnel accountability system. <strong>(B) Requisite Skills.</strong> The ability to implement an incident management system, to communicate orally, to manage scene safety, and to supervise and account for assigned personnel under emergency conditions.</td>
<td>Yes ☐ No ☐</td>
<td></td>
</tr>
</tbody>
</table>
Appendix 3: Form of Service Level Declaration

The sample document has been framed as a policy of BIM’s Council.

This version of the policy has been developed in a way so as to maintain the Department’s Interior Operations Service Level declaration from 2016, but to place restrictions on such interior operations until the Department can confirm the training levels of its members.

It should be noted that the Playbook does not require that the Department have every member trained up to the stipulated service level. There always will be situations where new members are starting off as recruits requiring training. Additionally, it is permissible to have members who provide only support services or otherwise limit their emergency scene activities. The sample policy addresses those situations by introducing the concept of “Principal Responding Members” (in this case, reflecting firefighters who are trained at least to the Interior Operations Service Level).
Bowen Island Municipality

Service Level Policy for Bowen Island Fire Department]

WHEREAS the Office of the Fire Commissioner has established minimum training standards for fire services personnel in the province under and in accordance with paragraph 3(3)(b) of the Fire Services Act in the form of the Playbook;

AND WHEREAS the Playbook requires that the “Authority Having Jurisdiction” (as that term is defined in the Playbook) over a fire department must establish the service level to be provided by that department;

AND WHEREAS the Council is the Authority Having Jurisdiction over the Department;

AND WHEREAS under the Establishment Bylaw, the operation of the Department is subject to the direction and control of Council;

NOW THEREFORE the following Service Level Policy is established in relation to the Department:

1. Definitions. The following capitalized terms shall have the following respective meanings, including in the recitals to this Service Level Policy:

   (a) “Council” means the council of Bowen Island Municipality;

   (b) “Department” means the Bowen Island Fire Department as continued under the Establishment Bylaw;

   (c) “Establishment Bylaw” means Bowen Island Fire Protection District Fire Regulations Bylaw No. 41, 1993, which bylaw is incorporated into and has become a bylaw of Bowen Island Municipality under the terms of its Letters Patent;

   (d) “Exterior Operations Service Level” means the Exterior Operations Service Level as defined in the Playbook;

   (e) “Fire Chief” means the individual who has been appointed as the fire chief of the Department in accordance with the Establishment Bylaw;

   (f) “Interior Operations Service Level” means the Interior Operations Service Level as defined in the Playbook;

   (g) “Member” means a firefighter in the Department and includes the Fire Chief and officers;

   (h) “Playbook” means the mandatory minimum training standards set under paragraph 3(3)(b) of the Fire Services Act (B.C.) by the Office of the Fire Commissioner and approved by the Minister of Justice, entitled British Columbia Fire Service Minimum Training Standards: Structure Firefighters – Competency
and Training Playbook (2nd Edition, May 2015), as same may be amended, revised or replaced from time to time;

(i) “Principal Responding Members” means those Members expected to undertake interior fire suppression and/or rescue operations in a burning structure; and

(j) “Service Level Policy” means this policy, as same may be amended from time to time by Council.

2. Authority and Application. This Service Level Policy has been established by the Council in accordance with the requirements of the Playbook, pursuant to the Council’s authority under the Establishment Bylaw. This Service Level Policy applies to and is binding on the Department and its Members. It shall form the basis of the Department’s training of its Members and related operational planning for fire suppression and emergency response activities.

3. Service Level Policy. The Department is authorized to provide fire suppression activities in accordance with and subject to the limitations set out in the Interior Operations Service Level, and subject to the other restrictions set out in this Service Level Policy.

4. Other Services. [While not strictly required, AHJs are encouraged to identify the services, in addition to fire suppression, which their departments are authorized to provide. These other services also impact training programs and related requirements, as well as affecting apparatus and equipment needs of fire departments.]

5. Training of Members. The Department:

(a) shall train its Principal Responding Members at least to the standard required by the Playbook for the Interior Operations Service Level; and

(b) in relation to Members who are not trained to the Interior Operations Service Level, shall:

   i. develop an incident scene accountability system which clearly identifies the different levels of each Member’s training; and

   ii. develop and institute operational guidelines which specify and limit the incident scene of activities of Members depending on their current level of training and qualification.

(c) In consultation with Chief Administrative Officer of Bowen Island Municipality, the Fire Chief shall be responsible for ensuring that the Department develops an appropriate training program for all positions, tasks and roles, including those which are not expressly covered by the Playbook. This training program shall meet the requirements of the Playbook and the Workers Compensation Act (B.C.) and regulations made thereunder, and shall be consistent with good
practices and fire service standards, including, where relevant, those set by the National Fire Protection Association from time to time.

6. **Operational Guidelines, Records and Compliance.** The Department shall:

   (a) develop appropriate operational guidelines implementing this Service Level Policy and the requirements of the Playbook, including operational guidelines:

   i. which set out the conditions to be considered by an incident commander before an interior attack or rescue is undertaken in a burning structure; and

   ii. which identify any hazards within the Department's fire suppression area in respect of which the Department will not undertake interior operations;

   (b) maintain accurate and complete records of the training of its Members, including any refresher training, any certifications or qualifications obtained, and otherwise as required by the *Workers Compensation Act* (B.C.) and regulations thereunder, such that the training level of each Member can clearly be established;

   (c) conduct pre-planning of any risks larger than a typical residential structure in the fire service area, in respect of which the Department intends to conduct interior operations; and

   (d) through the Fire Chief, report not less than annually to the Council on the Department’s training program, the training levels of its Members and compliance with this Service Level Policy and the requirements of the Playbook.

7. **Limitations on Services Provided.** Notwithstanding anything in this Service Level Policy:

   (a) in relation to any particular incident, the Department shall undertake only those emergency response activities for which its responding Members at the incident are properly trained and equipped; and

   (b) Council, the CAO, or the Fire Chief may determine to limit the fire suppression activities of the Department to the Exterior Operations Service Level for such period of time as may be required, in circumstances where, because of turn-over in Members or for other reasons, in the view of Council, the CAO or the Fire Chief, as the case may be, the Department should suspend undertaking interior fire attack or rescue operations.

   (c) Where a determination has been made under section 7(b) by either the CAO or the Fire Chief, he or she shall immediately inform Council, including the reasons for the decision. When the conditions giving rise to the determination have been remedied, the resumption of the Interior Operations Service Level may be undertaken on approval of Council.
8. **Policy Amendment.** This Service Level Policy shall be reviewed annually by the CAO with the Fire Chief, and reported on by the CAO to Council. It will be amended as determined appropriate by the Council or as required to conform to any changes to the Playbook or other applicable legislation, regulations or enactments.

9. **Temporary Restriction.** Notwithstanding section 3 of this Service Level Policy, the Department:

   (a) shall not undertake general interior operations for fire suppression purposes until the Fire Chief is able to certify to Council that the Department has sufficient Members trained and qualified for such work; and

   (b) may undertake primary search and rescue only if: [set stipulations]

This Service Level Policy is authorized and adopted as of this day of __________, 2020.

[Add signature blocks as required or appropriate]
Appendix 4: Fire Department Records Requirements

This Appendix provides a general outline of the categories of records that fire departments should, and, in many situations, are required, to maintain. This outline should not be treated as exhaustive nor is it intended that the reader solely rely on the information contained below. It is strongly recommended that the AHJ and Department review the requirements contained in Part 31 (Firefighting) of the OH&S Regulation under the WCA and the appropriate NFPA and ULC standards for specific recommendations and requirements on records maintenance.

Under section 31.9 of the OH&S Regulations, a fire department must keep the test and inspection records required by WorkSafe BC at the workplace for inspection by an officer or the joint committee or worker health and safety representative, as applicable.

The nature and general contents of the records that must be kept are specified in section 4.9 of the OH&S Regulation, which provides as follows:

4.9 Inspection and maintenance records

(1) If this Regulation requires a machine or piece of equipment to have an inspection and maintenance record, then an effective written or other permanent recording system or log must be immediately available to the equipment operator and to any other person involved with inspection and maintenance of the equipment.

(2) The recording system must

(a) identify the make, model and serial number of the equipment, and the name and address of the current owner,

(b) contain an entry on each shift, signed by the operator of the machine or equipment, reporting the result of each start of shift inspection and safety check, and any observed defect, operating difficulty or need for maintenance occurring on the shift, and

(c) contain an entry signed by the person responsible for any test, inspection, modification, repair or maintenance performed on the equipment, summarizing the work done, indicating the status of the equipment or machine for further use, and if appropriate, noting where a detailed record of the test, inspection, modification, repair or maintenance can be obtained.

(3) If this Regulation requires a machine or piece of equipment to have inspection and maintenance records, then detailed reports of inspection, maintenance, repairs and modifications must be kept for the duration of the service life of the machine or equipment and must be reasonably available to the workplace and
made available, upon request, to the operator and to anyone else involved in the
operation, inspection, testing or maintenance of the equipment.

1. Apparatus Maintenance

Fire department apparatus must be maintained by appropriately certified personnel. Under
NFPA 1911, vehicles should be maintained by individuals who are certified as emergency
vehicle technicians. Records need to be maintained on all vehicle maintenance and repairs, as
well as any failures in any part of the apparatus. The records required include:

- Annual pump testing
- Annual commercial vehicle inspections
- Weekly apparatus checks
- Non-emergent Trip inspection Reports
- Apparatus maintenance and repairs
- Apparatus equipment failures.

Sources:

NFPA 1911 – Inspection, Maintenance, Testing and Retirement of In-Service Automotive

Motor Vehicle Act Regulation (B.C. Reg. 26/58, as amended), Division 25: Vehicle
Inspection and Maintenance; and Division 37, Part 4: Trip Inspection. Emergency trips
are excepted from the pre-trip inspection report requirements, though a post-trip
inspection is best practice. Pre-trip inspections for use of apparatus on practice nights is
required.

OH&S Regulation, Part 17, ss. 17.01 – 17.9 (which deal with “Worker Transportation
Vehicles”, and apply to all vehicles designed to carry 3 or more workers)

OH&S Regulation Part 31, s. 31.27 – 31.31 contains provisions governing vehicles more
generally (e.g., seating, enclosed crew cabs, equipment storage, etc.)

2. Driver Training Records

Driver training is critical to the safety of both department members and the public. Departments
are required to ensure that members operating apparatus have all appropriate licensing
(including, where required, air brake certification). Records required to be maintained include
the following:

- Initial driver training and certification
- Annual driving training records
- Yearly driver abstract
- Written operational guidelines relating to the operation of firefighting vehicles during emergency and non-emergency travel.

**Sources**


OH&S Regulations, section 31.5(e).

3. Member Training Records (individual records)

Maintenance of appropriate training records is crucial for fire departments. Records should be stored in a manner that enables the department to readily confirm the specific training levels of each individual member. Back-up copies of the records should also be maintained off-site.

The records for specific areas of training should be maintained for each individual member and should show:

- Levels of recruit and probationary training achieved and when accomplished;
- Training sessions attendance (date and hours involved);
- Additional yearly formal training (including records of weekly and special training sessions and all certifications attained); and
- Ongoing yearly maintenance training in the various areas (to retain the levels of knowledge and skills achieved).

One of the issues that frequently arises is that, when skills are taught or refreshed during weekly practice sessions, the Departments do not use formal assessment and evaluation processes. As a result, the records often show only that a member attended a particular session, and not that he or she was qualified in the particular skill or JPR being taught. Formal evaluations should accompany all training and the results duly recorded on an individual basis.

Where training is being provided in-house (which is expressly contemplated by the Playbook), the person providing the training must be properly qualified in the skill or skills being taught. The trainer’s qualifications, therefore, need to be readily provable from his or her individual training records.

**Sources:**


Equipment Maintenance and Repair (General)

Playbook (see s. 3, p. 4/20; s. 6, pp. 6 -7/20)
4. **Ground Ladder Testing Records**

Ground ladder failures during fire-ground activities, while relatively rare, have the potential to cause major injuries to and possibly result in the deaths of both firefighting personnel and rescue victims during emergency operations. Unlike standard industrial ladders, fire service ground ladder must be capable of holding several people, including rescue personnel (with full PPE) and victims, from elevations of two or more stories.

Individual records and test results must be maintained for all ground ladders in use by a department. These records include:

- Annual inspection and testing
- Regular cleaning and inspection

**Sources**:

- OH&S Regulations, section 31.37 (Ground Ladders).

5. **Hose Testing Records**

Although an onerous task, annual hose testing is highly recommended. In addition, individual lengths of hose should be tracked throughout their in-service life. Fire hose failure during emergency incidents is greatly reduced through annual testing. The ideal place for fire hose to fail is at the fire hall during testing. Records should include:

- Records for individual hoses including in-service date, damage and repairs
- Annual inspection and testing

**Sources**


6. **Self-Contained Breathing Apparatus (SCBA) and PASS**

SCBA and PASS alarms are life critical safety devices for firefighters. WorkSafe BC requires that service and repair of SCBA units must be by qualified persons.

*Personal alert safety system – a device which sounds an alarm when a firefighter is down.*
The following records need to be maintained:

- Annual SCBA pack testing
- Annual and weekly pass alarm testing
- Bottle hydrostatic testing in accordance with CSA Standard CAN/CSA-B339-96, Cylinders, Spheres, and Tubes for the Transportation of Dangerous Goods
- Regular inspections of all SCBA components. The inspection of compressed air cylinders must be conducted in accordance with CSA Standard CAN/CSA-Z94.4-02, Selection, Use, and Care of Respirators
- Fit testing is required: (a) before initial use of a respirator, (b) at least once a year, (c) whenever there is a change in respirator face piece, including the brand, model, and size, and (d) whenever changes to the user’s physical condition could affect the respirator fit
- Appropriate medical certification showing fitness to use SCBA, where required (see OH&S Regulations, s. 31.20)
- Complete maintenance and repair records for each self-contained breathing apparatus and all air cylinders must be kept in accordance with the requirements of CSA Standard CAN/CSA-Z94.4-02, Selection, Use, and Care of Respirators (section 10.3.3.2.2-b to f, inclusive).

Sources

CSA Standard CAN/CSA-Z94.4-02, Selection, Use, and Care of Respirators


OH&S Regulations, sections 8.32 – 8.45 (Respirators).

OH&S Regulations, sections 31.19 to 31.26 (Respirators).

OH&S Regulations, section 31.18 (PASS alarms).

7. Personal Protective Equipment

Personal protective equipment includes turnout gear, helmets, hoods, boots, gloves and goggles. Aside from effective training, PPE is the most important tool a firefighter needs to do his/her job safely. Proper care of PPE, through regular inspection and cleaning, should be the first priority of all fire service personnel.
• The employer must have operational guidelines governing the inspection of protective clothing and equipment at regular intervals

• The equipment should be identifiable

• Procedures for cleaning and drying clothing must be in accordance with the manufacturer’s instructions

• Records of date of purchase, assignment and date for replacement must be maintained

• Records of regular cleaning, inspection and repair of all personal protective equipment should be maintained.

• Turnout gear older than 10 years must be replaced.

Sources


OH&S Regulations, Part 8 – Personal Protective Clothing and Equipment; see, in particular, s. 8.3.

OH&S Regulations, Part 31 – Personal Protective Clothing and Equipment; see in particular ss. 31.10 – 31.16. Note that s. 31.11, dealing with maintenance, includes a specific operational guideline requirement.

8. Rescue Ropes

Rescue ropes are defined as “designated rescue ropes” used to lift, carry, support rescue personnel and rescue victims during emergency incidents such as high angle, swift water rescue, confined space rescue etc. Rescue ropes are not standard general-purpose fire service ropes used during fire ground or emergency incidents to lift tools, secure equipment or tow vehicles. The following records must be maintained for all dedicated rescue ropes

• Records of date of purchase

• Dates of each use, damage, cleaning and repair.

Sources


OH&S Regulations, section 31.17.
Appendix 5: Joint Occupational Health and Safety Committee

As part of an OH&S program, employers are required to establish joint committees (or appoint worker safety representatives) to review and manage safety issues in the workplace.

The following is a sample set of terms of reference for a joint health and safety committee to be operated in respect of the Department and a draft letter to WorkSafe BC requesting consent to operate a single joint committee for the Department, in relation to its two halls.

Sample Joint Health and Safety Committee Terms of Reference

This sample Terms of Reference should be modified as required for the Department’s needs and to align with any formats or approaches otherwise in use by BIM for its existing OH&S structures.

Joint Health and Safety Committee Terms of Reference

1. Name of the committee

Bowen Island Municipality (“BIM”) hereby establishes the Joint Health and Safety Committee (the “Committee”) in the Bowen Island Fire Department (the “Department”) in accordance with the requirements of the Workers Compensation Act and section 31.3 of Part 31 of the Occupational Health and Safety Regulation.

2. Constituency and composition of the committees

a) There shall be two Worker Representatives for this committee who shall represent the Department’s volunteer firefighters. One shall be a member regularly responding out of Hall 1 and one shall be a member regularly responding out of Hall 2.

   a) Interested worker representatives will express their interest in serving on the committee and representatives will be elected, by secret ballot, at [last training night in November] for a January 1 start.

   b) An alternate member from each Hall may be appointed in the same fashion.

   c) The worker representatives so appointed shall serve for a calendar year and are eligible for re-election.

b) There shall be two Employer Representatives:

   a) [Fire Chief]

   b) [Deputy Fire Chief]

[Note to Draft: a BIM HR representative could fill one of these roles.]

   c) Co-chairs: The committee co-chairs are selected as follows:
i. The Worker representatives shall select a co-chair.

ii. The [Deputy Fire Chief] shall be a co-chair.

3. Purpose of the committee

A joint committee is required by the Workers Compensation Act and is made up of worker and employer representatives consulting in a co-operative fashion to identify and resolve safety and health problems in support of a planned occupational health and safety program in the places of employment.

4. Duties and functions of the committee

As required by section 130 of the Workers Compensation Act, the duties and functions of the committee are to:

a) identify situations that may be unhealthy or unsafe for workers and advise on effective systems for responding to those situations;

b) consider and expeditiously deal with complaints relating to the occupational health and safety of workers;

c) consult with workers and BIM on issues related to occupational health and safety and occupational environment;

d) make recommendations to BIM and the workers for the improvement of the occupational health and safety of workers and compliance with the Occupational Health and Safety Regulation, and monitor the recommendations’ effectiveness;

e) make recommendations to BIM on educational programs promoting the health and safety of workers and compliance with the Regulation, and monitor the recommendations’ effectiveness;

f) advise BIM on programs and policies required under the Regulation for this workplace and monitor their effectiveness;

g) advise BIM on proposed changes to the workplace or the work processes that may affect the health or safety of workers;

h) ensure that incident investigations and regular inspections are carried out as required by the Regulation;

i) participate in inspections and inquiries as provided by the Regulation;

j) select appropriate worker and employer representatives to participate in preliminary and full incident investigation processes;

k) review and provide feedback on any corrective action reports resulting from incident investigations;
l) when necessary, request information from the employer about:
   
i. known or reasonably foreseeable health or safety hazards to which workers at
   the workplace are likely to be exposed; and
   
ii. health and safety experience and work practices and standards in similar or other
   industries of which the employer has knowledge; and
   
m) carry out any other duties and functions prescribed by the Regulation.

5. Records and reports

Under the mandate of the joint committees, BIM and the Department will make the following
records and reports available to the Committee upon request:

- incident investigations reports;
- corrective action reports;
- inspection reports;
- OHS-related training records;
- BIM and the Department’s health and safety program;
- safe work policies and procedures;
- manufacturers’ specifications;
- first aid statistics; and
- time-loss injury statistics.

BIM and the Department will consider all other requests made for documentation not specified
above.

6. Meetings

a) The employer will supply the resources required to facilitate a meeting.

b) The co-chairs will appoint one (1) member at the meeting as note-taker to document the
minutes of the meeting or BIM shall provide an individual to take notes at each meeting.

c) Committees will meet monthly [at the end of first practice night in each month]
   unless an alternate time is agreed to by the co-chairs.

d) Special meetings, when required, will be held at the call of the co-chairs.

e) A quorum shall consist of a majority of members (four members) provided at least two
   members are worker representatives and that the number of employer representatives is
no greater than the number of worker representatives. If quorum is not met, the co-
chairs will call a special meeting.

f) Where a regular worker representative on the committee is unable to attend, an
alternate member appointed as provided in section 2(b) from the relevant Hall, may
attend in his or her place, and be counted towards quorum.

g) The alternate Worker Representative may attend all meetings of the Committee but is
only counted towards quorum and is only allowed to vote in circumstances where the
regular Worker Representative from is absent.

h) The committee co-chairs are responsible for securing meeting rooms, coordinating with
administrative staff, and any other logistical issues that may impact the meeting. In
general, the meeting shall be held at Hall 1.

i) Meeting shall typically be scheduled for no more than 60 minutes.

j) The Committee will add procedures it considers necessary for the meetings.

7. Role of the co-chairs

The co-chairs shall:

a) control the meetings;

b) ensure the maintenance of an unbiased viewpoint;

c) review previous meeting reports and material prior to the meetings;

d) notify members of meetings;

e) review meeting agendas;

f) review meeting reports;

g) forward a copy of meeting reports to BIM for distribution;

h) prepare recommendation(s) and forward to BIM for a response;

i) prepare all correspondence;

j) determine the process for alternating the co-chair; and

k) when called upon by BIM, identify employer representatives and worker representative
to participate in incident investigations in accordance with section 4(j).

8. Role of the Committee members

The Committee members shall:
a) be selected in accordance with section 128 of the *Workers Compensation Act*;

b) actively participate;

c) come prepared and on time for meetings; and

d) maintain confidentiality in relation to matters discussed at the Committee, and, in particular, any personal information arising from the Committee’s discussions or reviews.

9. **Guests**

a) Guests can be invited to committee meetings at the request of either co-chair.

b) Guests attending committee meetings must be there for the purposes of:

i. training;

ii. making a presentation to the Committee; or

iii. consultation on a matter or subject of interest to the Committee.

10. **Agendas and meeting minutes**

a) The agenda will be determined by the co-chairs.

b) The agenda and any other required documentation will be prepared by the co-chairs and distributed to committee members prior to the meeting. Whenever possible, the agenda should be emailed to Committee members five days in advance of the meeting.

c) A report of the meeting will be prepared as soon as reasonably possible after the meeting and will be made available to the employer, Committee members, workers, and WorkSafe BC.

d) A copy of the report of each meeting will be posted promptly, in each of the Halls. [An electronic version of the minutes will also be located on the BIM intranet.]

11. **Terms of office**

a) Members will sit on the committee for a one-year term.

b) If a member of the Committee is unable to complete the term of office, another member will be chosen.

12. **Participation in investigations**

a) When an investigation is required, it must be carried out by persons knowledgeable about the type of work involved and, if they are reasonably available, with the participation of an employer representative and a worker representative.
b) BIM may call upon the committee co-chairs to identify a worker representative from the committee to participate in the investigation.

13. Recommendations to the Employer

a) The Committee may make recommendations to BIM as contemplated by Sections 4(c) and (d) hereof, or as otherwise provided for in the Workers Compensation Act and Occupational Health and Safety Regulation.

b) Informal recommendations that can be actioned by BIM will be documented in the meeting minutes. BIM’s actions to address such recommendations will be reported on by the employer representatives and documented in the minutes of the next or other subsequent meeting of the Committee.

c) Formal written recommendations will be provided to BIM as a written resolution of the Committee, and BIM will respond within 21 days in accordance with the Workers Compensation Act.

d) In the event that BIM rejects a recommendation, or accepts it only in part, it shall provide written notice to the Committee giving reasons therefor. A co-chair of the Committee, if dissatisfied with the response, may report the matter to WorkSafe BC, which may investigate and attempt to resolve the matter.

14. Decision-making model

This Committee will make decisions based on consensus. If the Committee is unable to reach agreement on a matter relating to the health or safety of workers at the workplace, a special meeting will be called to address the matter. If the issue is still unresolved, a co-chair of the Committee may report the matter to WorkSafeBC for assistance in investigating and resolving the issue.

15. Education and training

All new members appointed on or after April 3, 2017, will participate in an introductory joint committee course. The co-chairs will assist new members in selecting the appropriate training course, or arrange such course and training as may be required. BIM will ensure that the training selected reflects the requirements of section 3.27 of the Occupational Health and Safety Regulation and BIM shall pay the reasonable costs associated with such training.
16. Annual Reviews

The Committee, on an annual basis:

a) will be provided with and consider the annual review of BIM’s occupational health and safety program, conducted by BIM’s joint committee, and provide such recommendations for updates or amendments as may seem appropriate or necessary; and

b) conduct an evaluation of, and provide a report in writing regarding, the Committee’s composition and operation as provided in section 3.26 of the Occupational Health and Safety Regulation.
Draft Letter to WorkSafe BC

The following is the draft text for a letter addressed to WorkSafe BC relating to using a single joint committee for the Department, in relation to its two halls.

[DATE]

[put on BIM letterhead]

[WorkSafe Address]

Request for Consent to Operate a Single Joint Committee

Bowen Island Municipality (the “Municipality”) operates the Bowen Island Fire Department (the “Department”) as a function of the Municipality. The Department comprises some XX volunteer firefighters operating out of two fire halls. The Department is led by a Fire Chief and Deputy Fire Chief. The Council of the Municipality is responsible for overseeing the operations of the Department and the Municipality is the employer of Department members under the Worker Compensation Act and related regulations.

The Department is in the process of updating its occupational health and safety materials. As part of that update, we would like to obtain the consent of WorkSafe BC under section 126 of the Worker Compensation Act to operate a single joint committee covering both fire halls.

At present, there are XX members who regularly respond out of Hall 1, located at 788 Grafton Road on Bowen Island and XX members who regularly respond out of Hall 2, located at 1421 Adams Road on Bowen Island.

By operating a single joint committee, the Municipality will be better able to ensure that occupational health and safety matters are addressed in a uniform and compliant manner in both halls. It also will reduce the time commitment and administrative pressure on the Municipality’s volunteer members.

The proposal is to have a single joint committee comprising:

(a) one worker representative (and one alternate member) chosen from among the members at Hall 1;

(b) one worker representative (and one alternate member) chosen from among the members at Hall 2; and

(c) two employer representatives ([name appointees by position]).

The draft terms of reference that would govern this single joint committee are attached.
We look forward to hearing from you regarding this matter. If you have any questions or require further details, please contact the Fire Chief, [name], at [contact details] or the undersigned.

Sincerely,

XXXXX

Chief Administrative Officer
Bowen Island Municipality

Attachment: Draft Terms of Reference
### Appendix 6: Fire Apparatus

#### Fire Chief’s Truck
- Located at: Hall 1
- 2015 Chevrolet Silverado
- 4-wheel drive
- Seats 5
- Command and control vehicle
- First responder equipment, including jump kit and defibrillator

#### Engine 30
- Located at: Hall 1
- 2005 E-One
  - Will be 15 years old in 2020
  - Will be 20 years old in 2025
  - Will be 25 years old in 2030
- Seats 6
- 850 gal. capacity, 1250 GPM pump
- 25 gal. foam capacity
- 6” draught capable 1150’ of 4” high volume supply hose
- 600’ of 2 ½” hose 500’ of 1 ¾ hose
- 1 x 150 of 2 ½” preconnected attack line 2 x 150 of 1 ¾” preconnected attack lines (foam capable)
- 4 SCBAs with spare bottles
- Miscellaneous ropes and tools
- Amkus hydraulic extrication set
- Vetter air bag lifting system
- Chainsaw and rescue saw
- Dry chemical extinguisher, CO2 extinguisher
- Built-in and portable generator
- Scene lighting system, monitor
**Engine 31**
- Located at: Hall 1
- 1989 Freightliner
  - Was 20 years old in 2009
  - Was 25 years old in 2014
  - Was 30 years old in 2019
- Seats 6
- 1000 gal. capacity, 1250 GPM pump
- 700 GPM portable pump, 300 GPM portable pump 6” draught capable
- 1150’ of 4” high volume supply hose
- 600’ of 2 ½” hose, 400’ of 1 ¾” hose
- Monitor
- Built-in electrical generator
- Scene lighting, ventilation fan
- 4 SCBAs with spare bottles
- 1 x 150’ of 2 ½” preconnected attack line 2
- x 150’ of 1 ¾” preconnected attack lines
- Dry chemical extinguisher, CO2 extinguisher
- Miscellaneous ropes and tools

**Engine 32**
- Located at: Hall 1
- 1978 Dodge 4-wheel drive Mini-pumper
- Seats 3
- 250 gal. capacity, 250 GPM pump 1 x
- 150’ hose reel 1 x 150’ 1 ¾”
- preconnected attack line
- 600’ of 2 ½” hose 600’ of 1 ¾” hose
- Dry chemical extinguisher, CO2 extinguisher
- Miscellaneous ropes, tools and lighting
- * During fire season months this truck is
- also equipped with: water bladder,
- additional forestry pumps and hose, etc.

**Rescue 30**
- Located at: Hall 1
- 2009 International 4-wheel drive
- Seats 5
- Equipped as a rescue vehicle
- 3 mins compressed foam unit (car fires)
- Breathing apparatus
- “jaws of life”
- Ropes
| **Tender 30** | • Located at: Hall 2  
• 2013 Freightliner  
• Will be 10 years old in 2023  
• Will be 15 years old in 2028  
• Will be 20 years old in 2033  
• Will be 25 years old in 2028  
• Seats 2  
• 2800 gal. capacity, 840 GPM pump  
• 3000 gal. portable tank |
| **Utility 30** | • Located at: Hall 2  
• 1997 Dodge Dakota  
• 4-wheel drive  
• Command truck  
• During the summer months the truck is equipped with hose and tools |
| **Wildfire Trailer** | • Located at: Hall 2  
• 2012 single axle trailer  
• Carries wildfire equipment  
• Can be towed by either Utility 30 or the Chief’s truck |
Appendix 7: Benchmark Survey Questions

- Population Served, is the following correct?
  - Pender Island = 2,250
  - Gabriola Island = 4,033
  - Invermere = 3,391
  - MacKenzie = 3,714
  - Grand Forks = 4,049
  - Gibsons = 4,604

- What is the size of your response area (square Kms)?

- Most recent Fire Underwriter Survey ratings and the year
  - What is your PFPC rating?
  - What is your DPG rating?

- Has your Department been granted a Superior Tanker Shuttle Accreditation?
  - Yes
  - No

- Is the Department operated by:
  - A Society?
  - A Local Government?
  - An Improvement District?

- Playbook Level of Service
  - Exterior, Interior or Full Service
  - Has this been defined by the AHJ?
  - Is there a bylaw or council policy you could share?

- Do you provide FMR, and to what level?
  - Automatically?
  - On an as-requested basis?
  - Not at all?

- Chief officer structure
  - Chief
  - Deputy (how many if more than one)
  - Assistant (how many if more than one)

- Number of volunteers by rank
  - Assistant Chiefs
  - Captains
  - Lieutenants
  - Training Officers
  - Firefighters

- Officer Positions
  - How are they chosen/appointed/elected?

- Pay and Benefits
  - Paid for practices and if so, how much?
  - Paid for responses and if so, how much?
• Paid benefit package?

• Annual Stipends
  o If so, for which positions and how much?

• How many fire halls in your Department?

• Apparatus, number each of:
  o Engines
  o Tenders
  o Aerial Ladders
  o Rescues
  o Fire boats/zodiacs
  o Technical Rescue
  o Others?

• Apparatus repair
  o Who manages the repair and maintenance of fire apparatus?

• Training required for each position
  o Firefighter
  o Lieutenant
  o Captain
  o Training Officers

• Training budget for the past three years
  o 2019
  o 2018
  o 2017

• Training on site or offsite?
  o Maintenance
    ▪ On site?
    ▪ Offsite?
  o Live Fire
    ▪ On site?
    ▪ Offsite?
  o Incident Scene Management
    ▪ On site?
    ▪ Offsite?

• Record Management Software (RMS) used by your department use
  o Fire.Net
  o FirePro
  o FDM
  o Other

• Fire Prevention
  o Does your department conduct fire inspections, and if so, how many?
  o What is the training or certification for the fire inspector?

• Fire Investigation
  o Does your department conduct its own fire investigations?
- If so, who does them and what is their training for this?
  - Does your department file fire reports with the Fire Commissioner?
- Public Education
  - Does your department have public education as part of the mandate, and if so how is this accomplished?
- Can you provide your budgets totals for the past three years and the current year?
  - Capital
  - Operating
  - Statutory Reserves
Appendix 8: Consultants’ Backgrounds

Dave Mitchell

Dave Mitchell retired as Division Chief, Communications in 1998 from Vancouver Fire & Rescue Services following a career spanning 32 years. During this time, he was responsible for managing the emergency call taking and dispatch for the Vancouver and Whistler Fire Departments. In 1997 he managed the transition of dispatch service for the five fire departments on the Sunshine Coast from an independent contractor to Vancouver Fire & Rescue Services.

In 1998, Dave was hired by E-Comm 9-1-1, Emergency Communications for BC (E-Comm) as its first Director of Operations. In this role he was a member of the founding senior management team and was responsible for the transition of the Regional 9-1-1 Control Centre staff from the Vancouver Police Department to E-Comm in June 1999. By June 2000 this included the management of approximately 200 call takers, dispatchers and team managers in addition to a ULC listed alarm monitoring service.

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

Dave holds a Bachelor of Arts Degree (Geography) from Simon Fraser University in addition to a diploma from their Executive Management Development Program. He is past Chair of the Board of Directors of the Vancouver General Hospital and University of British Columbia Hospital Foundation, and currently a Director and Board Chair of the Justice Institute of British Columbia Foundation, a member of the National Fire Protection Association, the National Emergency Number Association, the Association of Public-Safety Communications Officials, the Fire Chiefs’ Association of British Columbia, the BC 911 User Group, and the Canadian Association of Management Consultants.

Gordon Anderson

Gordon Anderson retired in 2019 with 29 years in the fire service, serving for the last five as the British Columbia Fire Commissioner. In this role, he was the senior fire authority for the Province providing advice to government and supporting local government fire services, as well as dealing with fire service issues at the national level.

During this time he implemented a new Structure Firefighter Training Standard (the Playbook), modernized and expanded the wildland interface Structure Protection Program in partnership with the BC Wildfire Service and the Fire Chiefs’ Association of BC and, with extensive stakeholder input, successfully developed and passed new provincial legislation to repeal and replace the current Fire Services Act (implementation pending). He also periodically fulfilled the
role of Acting Assistant Deputy Minister for Emergency Management BC (including during the record 2017 flood season).

Prior to joining the Office of the Fire Commissioner, he spent 13 years with volunteer fire departments, five years with the Victoria City Police and 22 years in Esquimalt Fire Rescue (a combination police/fire public safety department) where he rose through the ranks to finish his last six years as Deputy Fire Chief. He has extensive experience as a career department Chief Training Officer and 12 years as a contract instructor for the Justice Institute of BC’s firefighter training program and all four levels of the Fire Officer Certificate Program.

Gord has a Bachelor of Arts degree from the University of Victoria and NFPA Fire Officer Level 4 certification; in 2018 he earned a Bachelor of Public Safety Administration degree. He also holds certification as an Executive Chief Fire Officer and is a Fellow at the Institution of Fire Engineers (United Kingdom). He is past-President of the Council of Canadian Fire Marshals and Fire Commissioners as well as having served on the governance board of the Canadian Public Safety Operations Organization. The opportunity to use all of this experience has led him to move into a consulting role for a wide range of fire service, public safety and emergency management issues. Currently he is working with DMA on a core service review of Bowen Island Fire Rescue.

**Greg Betts**

Greg Betts is a professional administrator with over 30 years’ experience in local government and a proven record of leadership ability. He has a thorough knowledge of the relevant legislation, excellent written and oral communications skills, sound judgment and tact, and outstanding interpersonal and team building skills.

After graduating with a Bachelor of Arts (Psychology) from the University of Victoria (“UVic”) in 1981, Greg’s career in local government began as Deputy Corporate Officer with the District of West Vancouver. In 1986 he received his Master of Public Administration from UVic. He left West Vancouver in 1987 to become the Deputy Corporate Officer for the City of Surrey where he stayed until 1990 when he took the position of Chief Administrative Officer (“CAO”) for the District of Coldstream. In 2005 he took a two-year position as General Manager of Electoral Area Services for the Regional District of North Okanagan (“RDNO”) followed by a three-year term as the CAO for the RDNO.

Following his retirement in 2011 Greg began his consulting career undertaking the completion of an Integrated Community Sustainability Plan for the City of Enderby. In 2012 he assumed the contract position of CAO for the Township of Spallumcheen where he recruited the Township’s current CAO and assisted the Township in developing its first Community Development Plan (“CDP”). Since September 2014 he has continued to work with the Township to complete a number of capacity building projects identified in the CDP. One of these projects was to facilitate the implementation of recommendations arising from a Fire Services Review completed by Dave Mitchell & Associates for the City of Armstrong and Township of Spallumcheen’s shared fire department.
As a result of his involvement with the Armstrong/Spallumcheen Fire Services Review, Greg began an affiliation with DMA in 2015. To this group, he brings a breadth of general experience as a local government administrator and an understanding of the importance of communicating effectively with elected officials and city administrators. Most recently he worked on the fire service reviews for the Regional District of Okanagan Similkameen and the Thompson Nicola Regional District as well as a Governance and Administrative Review for the six fire departments of the Regional District of Nanaimo and a Fire Department Core Service Review for the Municipality of Bowen Island.

Greg brings an excellent perspective on the challenges and issues facing the fire service, particularly departments serving small and medium sized communities which rely heavily on the efforts of paid on call members.

Jim Cook

Jim Cook is an experienced professional with over 38 years of experience in the fire service. He has extensive knowledge and experience with budgets, labour relations, fire operations, strategic planning, executive leadership, project management, community engagement, and organizational change.

Jim began his career in the New Westminster Fire Department. He was promoted to the position of Deputy Chief in 2001. His roles and responsibilities included administration, a operating and capital budgets, communications, human resources, emergency operations, training and facility maintenance including the planning and oversight of the transfer of personnel and equipment to the new main fire hall.

In 2008, Jim was appointed to the position of Fire Chief in West Vancouver where he worked to improve the mutual and automatic aid agreements in the region. This included transitioning the department to the E-Comm Wide Area Radio System. He also served as a member of the senior management committee responsible for leading the analysis, planning and design of an emergency services building.

During his career, Jim has worked on several committees and boards including the BC Municipal Pension Plan, BC Investment Management Corporation, Vancouver Hospital Foundation, BC Fire & Life Safety Education Program, First Responder Program and the BC Fire Chiefs Association. He is also a past-President of the Greater Vancouver Fire Chiefs Association. He has also been an instructor in the fire officer leadership program at the Justice Institute of BC.

Jim retired in 2015 and is now working as a consultant specializing in organizational structure and change management in the fire service. He recently participated on DMA’s review of Nanaimo Fire Rescue’s Fire Prevention Division and the governance review of the Nanaimo Regional District’s fire departments. Currently he is working with DMA on a review of the Moberly Lake Fire Department for the Peace River Regional District and a core service review of Bowen Island Fire Rescue.
Wayne Humphry

Wayne has over 40 years’ experience with the BC fire service. He retired in 2009 from Vancouver Fire/Rescue after a career spanning 31 years. During this time, Wayne served in fire suppression, rising to the rank of Battalion Chief. He also worked extensively with Vancouver Fire’s training division as an instructor and Division Chief between 1996 and 2009. Based on his work in both roles he has extensive experience in fire rescue emergency operations, specialty teams, logistical planning and budgeting, training and development, facilitation, and project creation and management. In addition to his work with Vancouver Fire he has been an instructor at the Justice Institute of BC, at UBC’s Sauder School of Business as well as for Capilano University.

Wayne has developed and delivered in-house Firefighter and Fire Officer Development seminars, including ProBoard certified programs, for various career and volunteer/paid-on-call fire departments throughout BC, Alberta, Manitoba, the Yukon and Northwest Territories.168

His training expertise includes Firefighter I & II, Fire Officer Level 1, 2 and 3 programs – Emergency Incident Management (BCEMS/ICS, Command Post and EOC operations, fire behavior, strategies and tactics); Incident Safety Officer; Rapid Intervention Teams; Fire Service Instructor; and Live Fire Exercises Levels 1, 2 & 3.

Wayne has worked with DMA since 2010 and has participated in many of the fire service projects. Most recently he worked on the fire service reviews for Prince George, the Regional District of Fraser-Fort George, the Regional District of Okanagan Similkameen, the Thompson Nicola Regional District, the Peace River Regional District, and the Sunshine Coast Regional District. Currently he is involved in the Bowen Island and Moberly Lake projects. In addition, Wayne continues to develop and deliver firefighter and fire officer development and emergency incident management to a wide range of clients.

Ian MacDonald

Ian MacDonald is a former lawyer who practiced international corporate law in Canada and the United Kingdom. Ian started as a lawyer with Davies Ward & Beck in Toronto in 1990 and worked on large corporate transactions in Canada, including corporate financings, shareholder

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168 Wayne has trained fire fighters and fire officers from a large number of fire departments in several provinces including: Adams Lake, Armstrong-Spallumcheen, Ashcroft, Barriere, Beaver Creek, Burnaby, Burns Lake, Calgary, Celista, Central Saanich, Chase, Comox, Coquitlam, Cowichan Bay, Cranbrook, Cumberland, Dawson Creek, Deep Bay, Delta, District of North Vancouver, Enderby, Errington, Esquimalt, Fernie, Fort St James, Fort St John, Golden, Kamloops, Kelowna, Langford, Langley City and Township, Logan Lake, Loom Lake, Lumby, Malakwa, Maple Ridge, Mission, Nanaimo, New Westminster, North Saanich, Oak Bay, Peachland, Pemberton, Port Alberni, Port Alice, Port Coquitlam, Port Moody, Prince George, Princeton, Quesnel, Salmo, Sayward, Smithers, Sooke, Squamish, Summerland, Terrace, Vernon, View Royal, West Vancouver, Whistler, Williams Lake, Windermere, Winnipeg, Yale, and Yellowknife.

After moving to England in 1998, Ian became managing partner of Arnander, Irvine & Zietman, an intellectual property/litigation firm, and had a varied practice advising clients in respect of company formation, shareholder and members’ agreements, corporate financing, governance issues, and privacy matters. He also did extensive work on litigation files related to corporate fraud.

Ian retired as a lawyer in January 2004 and returned to Canada, since which time he has acted as a volunteer director on two boards, acting as the chair of the governance committee for both, and assisted various community groups in developing long term strategic and business plans. Ian has previously worked with Planetworks Consulting Corporation on the Capital Region Emergency Service Telecommunications project, conducting a full governance review of that organization.

Ian has worked with DMA for the past 13 years, working on almost all the major fire and emergency service projects, including the fire service reviews for the Kootenay Boundary Regional Fire Service, 100 Mile House Fire Rescue Department, Whitehorse, Prince George and West Vancouver fire departments, the Armstrong-Spallumcheen Volunteer Fire Department and the Thompson Nicola and Okanagan Similkameen regional districts.

Most recently, Ian participated on development of the strategic plan for the Sunshine Coast Regional District’s four fire departments, the related review of the SCRD’s Emergency Management Program, as well as the updating of the Saanich master fire plan. In addition, he is providing advice to several fire departments as they rewrite their bylaws to reflect the changes required by the Playbook and the Fire Safety Act. He is currently working on the fire service review project involving Bowen Island Fire Rescue, and on-going work with the Saanich Fire Department, helping to update its bylaws to meet the requirements of the new Fire Safety Act.