



Squamish Fire Rescue

Five Year Plan 2018-2022



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Introduction

Squamish Fire Rescue is currently being guided by a Master Fire Plan that was drafted by Dave Mitchell and Associates in 2013. This plan has provided some strong guidance to the department for a number of years, but by 2018 most of the recommendations in this plan will have been addressed (Appendix A, 2013 Master Plan Implementation). As such, Squamish Fire has set out to build a plan that covers the next five years, 2018-2022.

This plan was put together by a diverse group of firefighters which included department administration, career staff and volunteer members. Feedback was sought from the fire department, the District and subject matter experts to ensure that the plan is one that works for Squamish Fire Rescue, but more importantly, to make sure that the document reflects the wants and needs of the community.

The Department

Membership

Squamish Fire Rescue is a composite fire department that is made up of 6 career firefighters, 2 fire chiefs, 1 administrative support position and roughly 50 volunteers¹. Squamish Firefighters have identified membership as being one of its greatest strengths. The department's personnel are dedicated, experienced and often give a significant amount of extra time for emergency response, training and community events.

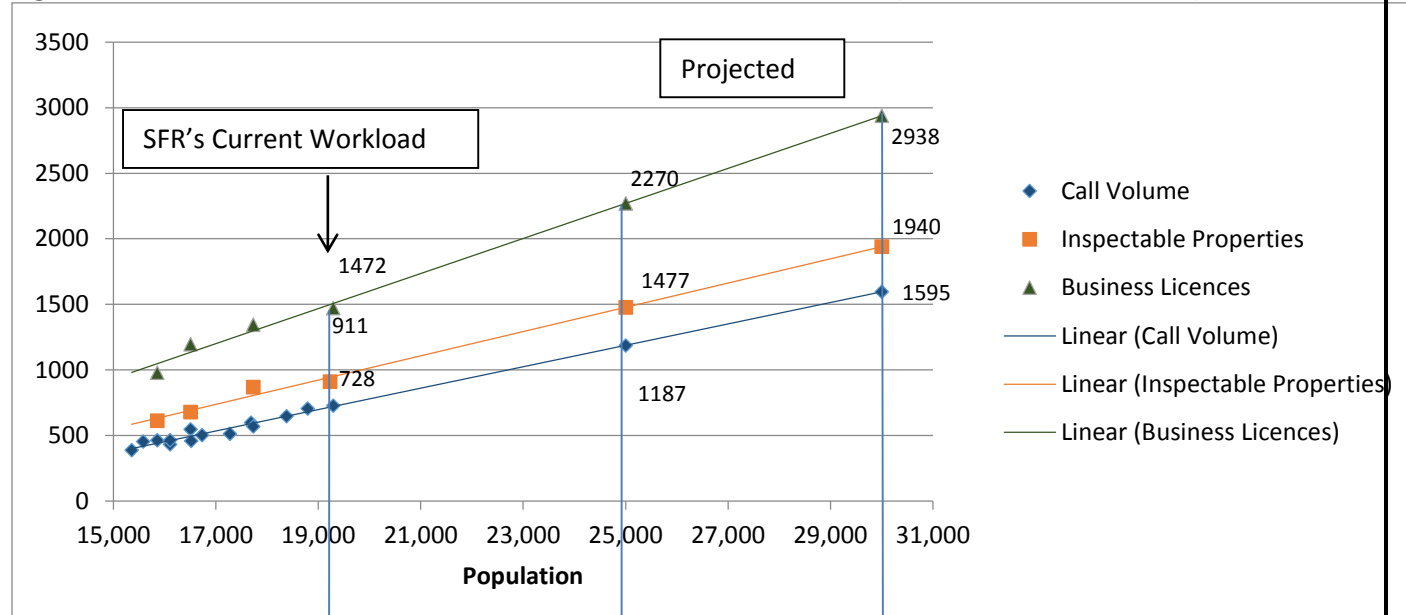
Career Staff

Squamish Fire Rescue's career staff works 8:30-4:30 Monday to Friday. In addition to this, at least one firefighter and one fire chief are on-call 24-7 for emergency response. Instructing volunteer firefighters and personal development courses demand even more time from the department's full time members. This staffing model is cost effective but the on-call time and scheduled extra work hours are becoming extensive. The mental impact of this extra time, when paired with normal occupational stresses, has the potential to create long term negative impacts on a firefighter's family life and mental health. Figure 1 shows where Squamish Fire sits relative to similar sized communities with regard to workload and career staff numbers.

As the District of Squamish grows, the demands on fire department staff also increases. Additional staff is budgeted for future years which will allow Squamish Fire to maintain its current level of service to the community. This growth in career staff opens up discussions about how to best utilize personnel resources; there comes a time when it no longer makes sense to add more personnel to a Monday through Friday staffing model. At some point in the future the department will need to consider seven day a week day-time coverage. Any moves to seven day coverage must be weighed against concerns of volunteer firefighters, many of whom feel that an expanded staffing model will lessen their ability to contribute to departmental operations and provide service to the community.

¹ For the majority of volunteer firefighters in the province, some form of compensation is paid for their time commitment. This compensation ranges from relatively small amounts (essentially, gas money) to an hourly rate for call outs or training. In general, the term "volunteer firefighter" includes the range from "no pay" to "paid on call" firefighters. In the case of the SFR, amounts "earned" by the volunteers are not paid to them directly, but are paid instead to their fire hall association (Mitchell and Associates, 2013).

Figure 1 – Workload and Staff Size Relative to Similar Sized Communities (based on 2015 numbers).



Pitt Meadows	
Population:	18 673
Fire Department	
Paid Staff:	5
Inspections:	760
Calls:	488

Fort St. John	
Population:	21 523
Fire Department	
Paid Staff:	25
Inspections:	1 500
Calls:	800

West Kelowna	
Population:	32 699
Fire Department	
Paid Staff:	39
Inspections:	1 223
Calls:	3 500

White Rock	
Population:	19 197
Fire Department	
Paid Staff:	24
Inspections:	750
Calls:	1 532

Courtenay	
Population:	24 806
Fire Department	
Paid Staff:	6
Inspections:	1 450
Calls:	685

Campbell River	
Population:	32 720
Fire Department	
Paid Staff:	23
Inspections:	1 400
Calls:	2 600

Cranbrook	
Population:	19 785
Fire Department	
Paid Staff:	23
Inspections:	1 300
Calls:	1 600

City of Langley	
Population:	26 652
Fire Department	
Paid Staff:	24
Inspections:	2 169
Calls:	2 700

Mission	
Population:	37 539
Fire Department	
Paid Staff:	13
Inspections:	774
Calls:	1 700

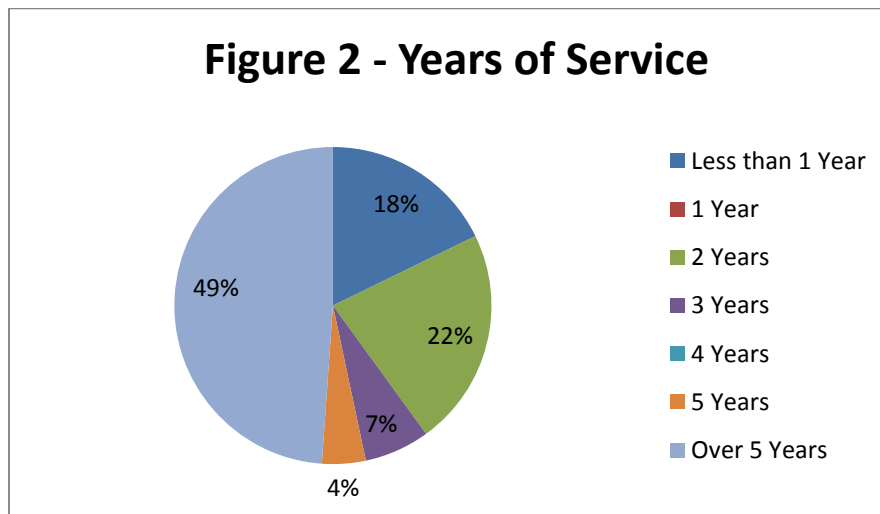
Squamish	
Population:	20 000
Fire Department	
Paid Staff:	8
Inspections:	911
Calls:	728

Volunteer Firefighters

The department's volunteer firefighters are a very dedicated group of individuals who need to put in a significant amount of time to meet the demands of a modern fire department. At a minimum, firefighters need to dedicate just over 100 hours a year to meet departmental standards. Given that firefighters have busy lives outside of the department, meeting these standards can be challenging; however the department often sees many of its members put in a great deal of extra time responding to emergencies, doing additional training and assisting with community events.

Squamish Fire is lucky to have an experienced group of volunteers. Figure 2 below shows that 49% of the department's volunteer firefighters have over 5 years of experience. This figure also shows a challenge that the department needs to address; 40% of our volunteer firefighters have two years or less experience. This lack of experience is indicative of a high level of personnel turnover within the department. In 2016, Squamish Fire experienced a 20% turnover of volunteer firefighter personnel.

Balancing the demands of a modern fire department with the time constraints of a volunteer firefighter is an on-going issue. Although the demands of the fire service are many, there is only so much that can be asked of a volunteer member.



Staff Growth Plan

In 2015 the department developed a plan for the long range planning of volunteer and career staffing (Appendix B – Attached). This plan provides a very good overview of required staffing trends from the present until the District's population reaches 30 000 people. As such, this growth plan is adopted as an adjunct to this five year strategic plan. It is important to note that while the staffing plan provides a reasonable path for meeting anticipated needs, input from future Fire Underwriters Surveys may recommend an increased rate of staffing growth.

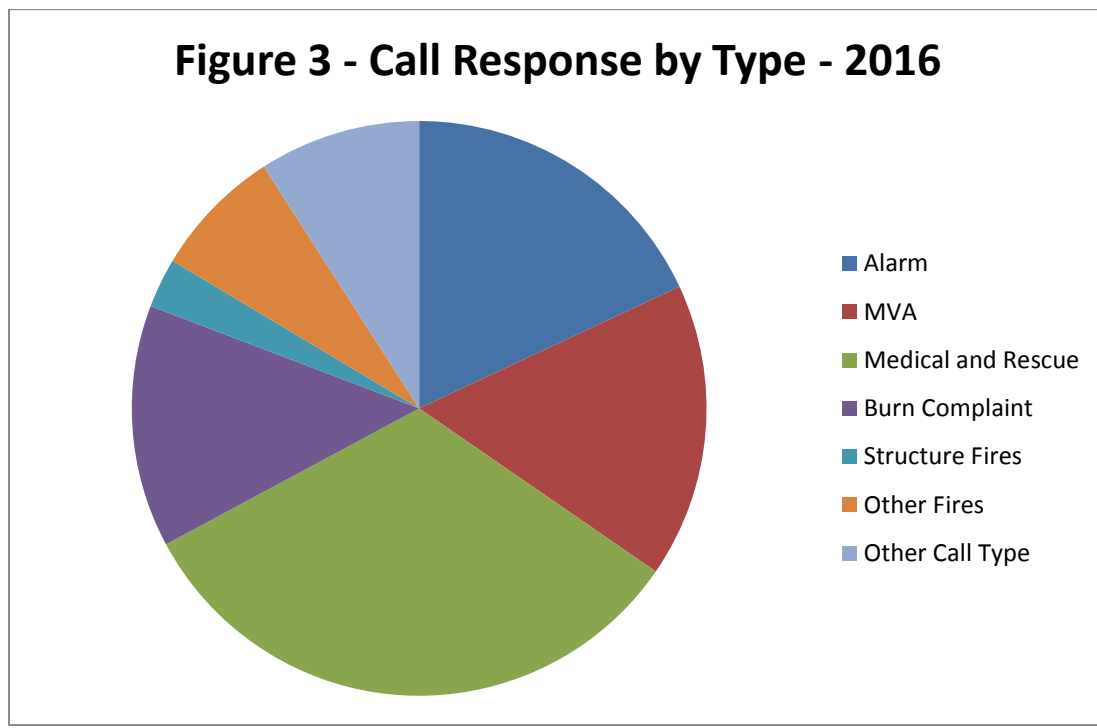
Responsibilities

Response

Squamish Fire Rescue members respond to the following types of incidents:

- Structure Fires
- Wildland Fires
- Highway Rescue Incidents
- Medical Assist with British Columbia Ambulance
- Technical Rescue Incidents
- Hazardous Materials incidents

Figure 3 shows proportional breakdown of different types of calls that the department responded to in 2016.



Prevention

In addition to responding to emergencies, the department also focuses on attempting to stop incidents before they happen. This is done through:

- Fire and life safety education
- Commercial building inspections
- Reviewing development proposals to ensure that fire and life safety measures are implemented as required.

Equipment Maintenance

All of the fire department's rescue related equipment must undergo thorough daily, weekly, monthly and/or annual testing to ensure that it is functional and to ensure that it meets regulations and industry best practices.

Events

While not a responsibility, all of the members of the department put in a sizeable number of hours organizing or assisting with community events. Most of these events are organized by the Squamish Firefighters' Association, which is a body separate from the department, but made up of fire department members. Events hosted or attended by SFR firefighters include:

- Guns and Hoses Charity Hockey Game
- Annual Easter Egg Hunt
- Canada Day Parade
- Walk a Mile in Her Shoes
- Terry Fox Run
- Christmas Parade

Training

Today's fire service is faced with a wide array of challenges, so training in multiple disciplines is required to meet anticipated emergencies. Squamish Fire is no exception to this trend. The members of this department undergo rigorous training in:

- Structural firefighting
- Wildland firefighting
- Medical first responder
- Auto extrication
- Over the bank rope rescue
- Swiftwater rescue awareness
- Hazardous materials operations
- Incident command system
- Emergency scene management
- Fire officer disciplines
- Fire apparatus driving & pumping

In order to meet the varied needs of today's service, members must commit to an extensive training regime. Firefighter's training commitments are as follows.

- Volunteer Firefighters
 - Practice once a week for 2 hours
- Career Firefighters
 - Practice once a week for at least 2 hours
 - Prepare and conduct training for volunteer firefighters

- All firefighters
 - Almost every firefighter on the department is required to do some level of additional training every year. This training can run from one day to over one week.

Administration

The fire department's administrative support position is responsible for "front counter" duties at the fire hall but also performs a number of mission critical functions.

Responsibilities include:

- Entering all training records
- Entering over 700 emergency response records per year
- Coordinating training, public education and recruitment sessions
- Provides enormous levels of varied types of support to all fire department members and the district's emergency program coordinator

Financial Impact

Squamish Fire Rescue's 2017 operating budget is \$1.7 million dollars. The impact of this investment in the fire service is offset by reductions in property insurance premiums. It is estimated that property owners within the District would pay about \$9.5 million in insurance if there was no fire protection. On the other hand, it is estimated that property owners currently pay about \$5.2 million for insurance *and* fire protection. This relates to \$4.3 million in savings.

So, the cost of fire protection and insurance is 46% less than insurance with no fire protection.²

Year	Area	Protective Services - Fire Protection Operations	2015 Assessed Value (Improvements Only)	Insurance Rate per \$100K with Service	Insurance Rate per \$100K Without Service	Avoided Costs with the Fire Service	Benefit Cost Ratio (for every \$1 spent see benefit below)
				\$ 250	\$ 629		
2015	District of Squamish	\$ 1,708,335	\$1,337,795,338	Value of Fire Service: With Fire Service (insurance cost plus fire service cost)	Without Fire Service (with insurance cost only)	\$4,381,520	1.85

Figure 4 – Financial Benefit of Fire Protection Services ²

² Fire Chiefs' Association of British Columbia, (2016). Comparative Analysis 2001-2015 FCABC Distribution.

The Plan

After examining the department's challenges and opportunities, and consulting with membership and industry experts, it was recognized that Squamish Fire Rescue should concentrate on five key areas over the next five years; these are:

- Membership
- Training
- Prevention
- Community Relationships
- Preparing for Future Growth

Each of these areas will be examined further in the next few sections of this document. A Summary of the recommendations is attached (Appendix C).

Membership



Membership

Challenges/Opportunities

- Fire protection surveys and industry benchmarks indicate that Squamish Fire Rescue requires more personnel at fire scenes, so increasing career and volunteer membership is an issue of significant importance.
- Heavy workload and time commitments in the #1 Hall area, which are projected to increase with future development.
- High level of firefighter turnover sets the department in a constant state of recruiting and creates an experience deficit.
- Excessive career staff workload leading to missed opportunities, excessive overtime and firefighter burnout.
- Firefighters are being placed into new positions with acceptable training but little experience.
- Industry statistics indicate that heart disease and cancer are statistically legitimate threats to a firefighter's health and survival. Critical incident stress is also recognized as a hazard. The department currently has no program in place to address these issues.
- Future membership growth provides opportunities to enhance firefighter engagement and allows more opportunity for meaningful contribution.

Goals

1. Ensure that Squamish Fire's career and volunteer staffing levels allow for the continuance of the department's current level of service as the community grows, while preserving a cost effective delivery model.
Priority : High
2. Generate programs that will address known threats to firefighter health and safety.
Priority: High
3. Create succession plans and a culture of coaching in order to ensure that every member of the department is ready to take on progressive roles within the department as opportunities arise.
Priority: High

Objectives

Volunteer Retention – End of 2022

- 90% membership response to annual membership feedback surveys.
- Lower the level of annual volunteer membership turnover from its current level of 20% to 10%.
- 75% of members joining the department in any given year stay for at least 3 years.
- 35% stay for at least 5 years.

Assigned to: Bill Stoner

Volunteer Recruitment – End of 2022

- Develop a second company of firefighters to serve #1 Hall by growing membership from its current level of 15 firefighters to 30 firefighters.

Assigned to: Bill Stoner

Career Staff Growth – End of 2020

- Implement the Fire Rescue Service Growth Plan's recommendation to request an additional firefighter in 2018.
- Add an 8th position by 2020.

Assigned to: Bill Stoner

Fire Department Health and Safety Program – End of 2019

- Develop a fire department health and safety program which focuses on accident prevention, fitness, mental health and cancer prevention.

Assigned to: Aaron Foote

Fire Department Succession Plan – End of 2018

- Develop a comprehensive succession plan which prepares firefighters to move into the following roles.
 - Driver/pump operator
 - Fire service instructor
 - Acting volunteer fire officer
 - Volunteer fire officer
 - Career firefighter

Assigned to: Bill Stoner/Kyle Derksen

Training



Training

Challenges/Opportunities

- Squamish Fire is not currently meeting the requirements of the provincial training standard (“The Playbook”).
- Employee turnover can be improved by using training to increase volunteer firefighter engagement.
- The demands on a modern fire department create a training environment that requires a significant investment of time from both instructors and students.
- Membership is on track to meet a challenging training standard; however there are no programs in place to ensure that skills are maintained at these high levels.

Goals

4. Be fully compliant with the “Full Service” requirements of the “Playbook” by 2022.
Priority: High
5. Greater recognition of firefighter training efforts through the increased utilization of accredited training programs.
Priority: Medium
6. Create training programs that will enhance firefighter engagement and develop opportunities to expand course offerings with existing resources.
Priority: Medium

Objectives

BC Firefighter Training Standard – 2022

- All fire officers to meet the NFPA Fire Officer Level 1 Standard.
- The creation of training maintenance standards for firefighters, fire officers, pump operators, and rescue team leaders.

Assigned to: Bill Stoner / Kyle Derksen

In –House Accredited Training – 2020

- Regular offerings of:
 - JIBC's Pumping Apparatus Driver/Operator Course (2018)
 - A JIBC vehicle rescue course (2018)
 - A Raven Rescue technical rescue course (2018)
 - At least one JIBC fire officer course (2018)
- Squamish Fire Rescue members to instruct and/or evaluate all of the above mentioned courses on behalf of the JIBC or Raven Rescue (2020).

Assigned to: Bill Stoner / Kyle Derksen

Volunteer Instructors – 2019

- Volunteer Instructor Program developed (2018)
- Volunteers regularly assisting with instruction (2019)

Assigned to: Bill Stoner / Kyle Derksen

Prevention



Prevention

Challenges/Opportunities

- As Squamish grows, the demands for fire department services will increase. Resources available to the fire department may not increase at the same rate so innovative means of providing quality fire protection must be sought.
- Commercial business fire inspections provide a very effective fire prevention measure. The department currently has untapped capacity for more inspection productivity.
- Customer service can be enhanced through greater interaction with the customer; placing a greater focus on fire prevention initiatives will allow the fire department more opportunities for direct positive interaction with the members of the community.

Goals

7. To implement new and/or enhanced fire prevention measures which will reduce fire risks, and potentially reduce commercial fire insurance premiums, in a cost effective manner.

Priority: Medium

Objectives

Sprinkler System Bylaw – 2018

- Work with development services to draft a sprinkler bylaw which will permit the District of Squamish to continue with, and enhance, the requirement for fire suppression sprinkler systems within new buildings. This initiative will decrease property loss, increase life safety and have a positive impact on fire insurance premiums.

Assigned to: Bill Stoner/Development Services

FireSmart Community – 2022

- Receive the FireSmart Community Protection Achievement award by the end of 2022.

Assigned to: Aaron Foote

Community Smoke Alarm Program – 2018

- Develop and implement a smoke alarm program which targets at-risk areas of the community.

Assigned to: Aaron Foote /Trevor Kranenburg

Fire Inspections - 2020

- Perform over 900 commercial fire and life safety inspections per year.

Assigned to: Aaron Foote/Trevor Kranenburg

Public Education - 2019

- Reestablish targets for annual public education events to 2015's recognized 30 deliveries per year.
- Improving the impact of public education sessions by focusing on under-served community groups and demonstrated at-risk populations.

Assigned to: Alana Parno/Bill Stoner

Community Engagement



Community Engagement

Fire Department and Community **Challenges/Opportunities**

- Squamish Fire Rescue has an opportunity to enhance its value to the community through enriching its relationship with the people who live here. By increasing interaction with our residents, Squamish Fire will be better able to understand the service expectations of our stakeholders and take advantage of opportunities to inform community members of current levels of service.

Goals

8. To develop an enhanced relationship with the community by taking advantage of opportunities for more community interaction.
Priority: Medium
9. Increase community awareness of fire department activities through enhanced use of social and traditional media.
Priority: Medium

Objectives

Increased Media Presence – 2018

- Increase the use of traditional and social media to share relevant fire and life safety information as well as many of the fire department “victories” that often go unnoticed.

Assigned to: Bill Stoner / Communications

Public Practices – 2018

- Conduct two to three “open practices” per year where the public will be invited to watch and interact with firefighters.

Assigned to: Bill Stoner / Kyle Derksen

Safe Walk to School Program - 2018

- Position fire apparatus with visible signage in school zones two or three times a year as a reminder to drivers that slow speed in school zones matters.

Assigned to: Bill Stoner

Community CPR Instruction- 2018

- Offer a free CPR clinic/course during a family oriented event.

Assigned to: Bill Stoner

Community to Community Collaboration

Challenges/Opportunities

- Squamish Fire has the opportunity to increase efficiency of operations by collaborating with neighbouring communities in the areas of training and procurement.
- The need to build numbers at #1 Hall is an identified concern. Expanding recruitment activities to Squamish Nation communities will give the department another source of great volunteer personnel.

Goals

10. Meet with Sea to Sky and North Shore fire departments to discover areas where efficiencies can be realized through greater collaboration.

Priority: Medium

11. Enhance volunteer firefighter recruitment efforts within Squamish Nation communities.

Priority: Medium

Objectives

Sea to Sky Corridor Training Plan – 2018

- Host annual meetings with Sea to Sky fire departments to maximize training productivity and eliminate redundancy by employing a coordinated approach.

Assigned to: Bill Stoner and Kyle Derksen

Sea to Sky Procurement Group– 2019

- Develop a Sea to Sky procurement group that will maximize purchasing power with group buying power.

Assigned to: Bill Stoner and Aaron Foote

Squamish Nation Volunteer Firefighters – 2018

- Work with the Squamish Nation to develop volunteer recruitment drives for Squamish Fire Rescue.

Assigned to: Bill Stoner

Anticipating Future Growth



Anticipating Future Growth

Challenges/Opportunities

- Potential development in the north Brackendale area (Cheekeye) may lead to a need for an additional fire hall, staff and equipment.
- Number 2 Fire Hall is located in a flood zone and does not meet current post disaster standards.
- Number 2 Fire Hall has a footprint that could accommodate fire department operations, however it needs major renovations to incorporate current community and fire service requirements.
- As the volunteer staff grows at #1 Hall, more space will be needed to accommodate new firefighters and additional equipment.
- The densification of Squamish's downtown area may create a need for additional fire apparatus in order to meet Insurance Underwriters requirements.

Goals

12. Replace the Number 2 Fire Hall or develop a *comprehensive* short term plan to conduct a major renovation of the building which will ensure post disaster stability, accessibility and maximum usability of the existing space, with a focus on anticipated future needs.

Priority: Very High

13. Develop a plan to accommodate Number 1 Hall growth.

Priority: High

14. Identify a location for a future hall in North Squamish.

Priority: Medium

Objectives

#2 Hall Apparatus Bays – 2018

- Complete seismic stabilization project of the apparatus bay.

Assigned to: Aaron Foote /Capital Projects

#2 Hall Administration – 2022

- Complete seismic stabilization of the administration area.
- Begin hall replacement project or complete extensive renovations which will increase safety and allow for more efficient and effective operations.

Assigned to: Aaron Foote /Capital Projects

#1 Hall Growth – 2022

- Complete an addition that will allow for more gear, apparatus and equipment storage.

Assigned to: Aaron Foote /Capital Projects

#3 Hall – 2018

- Identify a location for a fire hall in north Squamish.
- Identify a “trigger point” for the development of this hall.

Assigned to: Aaron Foote /Capital Projects

Appendix A – 2013 Master Plan Implementation.

#	Recommendation	Priority	Status	Expected Completion
1	Fire Service Bylaw to be reviewed	Medium	Can be addressed through the regular system of by-law review and updates.	2018
2	Authorize response out of jurisdiction (wildland fires)	Med	Can be addressed through the regular system of by-law review and updates.	2018
3	Review existing fire inspection schedule	Medium	In process – to be brought to council with the next fire service bylaw review.	2018
4	Review Whistler mutual aid agreement	Low	No move to address this issue at present; however this agreement should be reviewed and updated from time to time.	2018
5	Consider entering into mutual aid agreements with other departments	Low	No move to address this issue at present. The decision to expand service delivery beyond our boundaries is a policy decision. It may be worth considering in the future.	N/A
6	Revise Operational Health and Safety Policy and Health and Safety Program Operational Guidelines	Low	Complete	2015
7	Align the Operational Health and Safety Committee Operating Guideline with the requirements of the Workers Compensation Act	Low	This is a housekeeping matter which involves cleaning up the language in an operating guideline. This is easily addressed.	2018
8	Review requirements for having one Health and Safety Committee for two halls	Low	Housekeeping issue to be addressed.	2018
9	Post minutes of fire department Health and Safety meetings at each hall. Minutes to indicate meeting chairs.	Low	Complete	2015
10	Implement a program of Fire Officer training for all Captains and Acting Captains	Med	In Progress All current officers have met the requirements of	Full playbook compliance with NFPA 1021

			ESM 1. The department is moving towards Fire Officer 1 as the fire officer standard, but this is a longer term goal.	by 2022.
11	Review of volunteer retention and recruitment issues at Hall 1	High	Complete The department has implemented an aggressive recruitment campaign for the #1 hall area. This recruitment campaign is designed to be an on-going program which ramps up prior to the annual recruitment deadline each year. Efforts will continue until #1 Hall reaches target levels.	2016
12	District and the Firefighter's Association review approach to firefighter's compensation	Low	Complete -Issue reviewed and resolved in 2015. The current system has a clear mandate for short term future.	2015
13	Plan for the replacement of fire apparatus prior to the completion of 20 years of service	High	Complete -Operations has a long term roll-over plan with all apparatus being rolled over at or before 20 years.	2017
14	Consider extending service of Engine 11 or 22	Med	Complete – Recommendation not accepted. A single new apparatus was purchased to replace two older pieces of apparatus.	2015
15	Rescue 2 to be replaced with a unit with greater firefighting capacity	Med	Complete The new rescue does not provide much greater structural firefighting capacity.	2015

16	That all maintenance be recorded more completely in an electronic format that is searchable	High	In - Progress	2018
17	That a cost/benefit analysis of hiring an Emergency Vehicle Technician be conducted	Med	No action taken. Maintenance and repair of fire department apparatus have become the responsibility of District vehicle maintenance staff.	N/A
18	Supplement the existing training program with opportunities which prepare members for the role of incident commander	High	Complete	2017
19	Establish minimum qualifications for recruits, probationary firefighters, firefighters and officers	High	Complete	2015.
20	Develop operational guidelines addressing fire ground operations, such as offensive attack.	High	Complete	2016
21	Conduct a qualification review of the membership and implement training programs to ensure that gaps are filled.	High	Complete	2015
22	Review record keeping practices and ensure that the department is maintaining all required records.	High	Complete - A review has shown that required records are being kept. -Updates in record keeping databases are required. This is addressed by other recommendation.	2015
23	Upgrade to a current version of Fire Department Management (records management system)	Low	Complete	2017
24	Look to create a computer aided dispatch to records management system interface	Med-low	TTP	2018
25	Look to create a records management system to computer aided dispatch interface	Med-low	TTP	2018
26	Obtain additional modules for the department's records management system to allow greater functionality.	Low	TTP	2018
27	Pre-plans should be developed and added to the computer aided dispatch	Med	The fire department has begun the development of pre-fire plans.	N/A

			This is an on-going process as building configurations continually change and new inventory is added to the district.	
28	Map grids should be added to the Computer Aided Dispatch	Very Low	Sound local knowledge and the use of efficient mapping software make this recommendation of very low importance.	N/A
29	The department should consider joining "Project Fires" a cloud based records management system	Low	New records management system software is very much required; however the cloud based system referenced in this recommendation is just one a number which could address the needs of the department.	2018
30	The department should ensure that new programs do not have a negative impact on fire prevention programs	High	Complete Squamish fire is very much aware that it has a limited quantity of personnel resources available to pursue new initiatives. With current staffing levels, any expansion of services beyond what the department is currently offering would be difficult and perhaps not possible.	2015
31	Continue with the pre-fire planning process	Med	The fire inspectors have initiated a process of developing pre-fire plans that requires minimal fire department effort. Moving ahead, the department must find a means of ensuring that all high hazard/risk buildings within the District are pre-planned.	2017
32	That the department consider staffing variations to allow for greater morning coverage	High	The fire department is currently planning on implementing a new shift	2018

			system in 2018 that will provide greater morning coverage.	
33	Develop a second platoon of career firefighters	High	This option is scheduled to be implemented sometime in 2018.	2018
34	Replace or renovate Hall 2 to ensure seismic stability	High	In Progress	2018
35	Plan for a third hall to cover future development	Med	A tentative site has been identified. Further work on this hall will be tied to development in North Squamish	2017
36	Review and enhance fire inspection enforcement procedures	Med	Complete	2015

Appendix B – Fire Rescue Service Growth Plan.

Overview

The District of Squamish Fire Department Master Plan was adopted by council in September of this year. It is a comprehensive document touching on many relevant topics including operational guidelines, training, capital requirements, fire halls and bylaws. The master plan addresses most of these areas with sufficient detail to provide useful guidance for future planning. In the area of fire department staffing however, the report gives some short term recommendations but lacks the material needed to plan for future growth.

This report will expand on the recommendations put forth in the Fire Master Plan by anticipating future staffing needs of Squamish Fire Rescue.

Master Plan Recommendations

The fire department master plan made two recommendations specific to short term staffing:
Recommendation #32

- That the Department consider one or more staffing variations to provide coverage on weekday mornings prior to the arrival of the day shift crew.
This recommendation was given a suggested implementation date range of 2014-2015.

Recommendation #33

- The Department develop a second platoon of career firefighters to provide full day shift coverage seven days a week and to provide additional call-back firefighters Monday to Friday.
This recommendation was given a suggested recommendation date range of 2015-2017.

Current Staffing Levels

Over the last ten years, the District of Squamish has experienced considerable population growth which has led to a corresponding escalation of fire department workload; during this time period staffing levels have remained stable (Attachment 2). Based on this situation it makes sense to begin any consideration of future staffing with a brief examination of the existing model. Currently, three staffing options are worth examination; these are status quo, increasing staff by one FTE and increasing staff by two FTE's. The pros and cons of each option are presented below.

Option 1 - Status Quo

Four firefighters, one captain and two chief officers working Monday to Friday – day shifts.

Pros

- Cost effective – no additional staff required
- Department's volunteer firefighters are comfortable with this organizational structure

Cons

- Will not address Fire Department Master Plan Recommendations #32 and #33
- Current staffing levels do not allow the fire department to meet regulatory requirements and industry best practices while maintaining current level of service:
 - In 2014 fire inspectors performed 537 inspections and/or re-inspections. In total, only 285 of over 900 of the District's inspectable properties were visited. Fire inspections are mandated by provincial law and are one of the most effective means of reducing fires and enhancing life safety in commercial buildings.
 - The department is struggling to meet industry best practices for equipment maintenance, such as annual fire hose testing.
- In order to meet regulatory requirements, a reduction in service levels may be required. This may entail a decrease in public education sessions or medical first responder services.
- Current staffing levels lead to high level of overtime.
 - 2014 - \$68 000 overtime.
 - 2015 - \$60 000 YTD.
- High potential for career firefighter burnout
 - Career firefighters are on-call one week of every five. During this time they are responsible for responding to calls 24 hours a day. A week on-call has the mental impact of a 24-hour/7 day workweek.
 - New regulatory requirements require a much greater need for after-hours instruction.
 - BC Firefighter Minimum Training Standard requires firefighter training that can not be addressed during normal weekly fire practice so firefighters work after hours to help new recruits meet this standard.

Option 2 - One Additional FTE

One additional FTE working Monday to Friday. This position would be dedicated to fire inspections.

Pros

- One additional FTE plus technological and workflow enhancements to the inspection process should allow the department to meet its inspection mandate.
- Volunteer firefighters would remain comfortable with this staffing arrangement.
- No reduction in service levels would be required.

Cons

- Will not address Fire Department Master Plan Recommendations #32 and #33

- Increased costs.
- No reduction in overtime.
- Minimal reduction in the potential for firefighter burnout.

Option 3 - Two Additional FTEs

Two additional FTEs would allow career staff to provide 7 day a week, 12 hour per day coverage. This staffing arrangement is currently being referred to as the “Bravo Shift”.

Pros

- Fully address Fire Department Master Plan Recommendation #32 and #33.
- Greatly enhanced service level
 - Based on historical data, the department would be able to respond to 70% of working fires in 7-8 minutes on average; as opposed to the current staffing arrangement which sees an average 11-13 minute response 70% of the time (Attachment 3).
 - Fire inspectors would available 7 days a week.
 - Medical first response service could be expanded into weekends.
 - Industry best practices regarding equipment maintenance would be met.
- Reduction in overtime hours
 - \$21 000 estimated decrease in overtime.
- Reduction in the potential for firefighter burnout.
 - More firefighters would lead to a reduction of on-call hours.
 - Bravo shift would give career firefighters more days off to “decompress”.

Cons

- Increased costs.
- Operating a three firefighters a shift, where industry norm is four.
- Some volunteer firefighters see this staffing option as potentially having a negative impact on their ability to contribute.

Recommendation

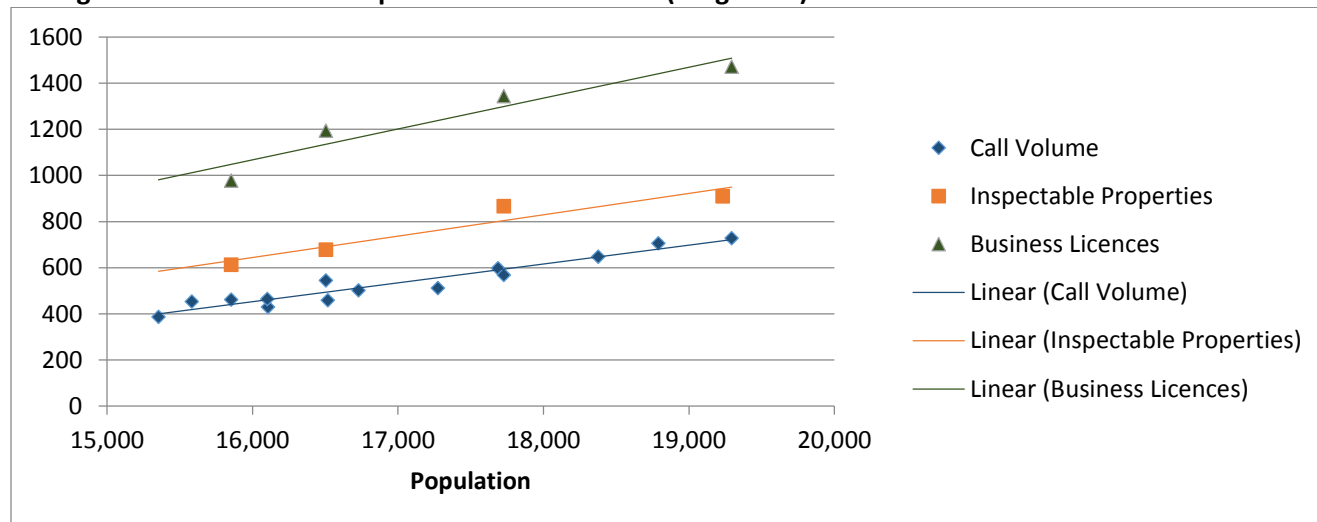
In order to keep fire department service at its current level, it is recommended that a full time fire inspector be hired in 2016.

A second full time firefighter should also be hired in the near future, as it will allow the department to provide fulltime fire services twelve hours a day, seven days a week. This will reduce the overtime burden carried by the department’s current staff and allow Squamish Fire Rescue to deliver better response times, increased medical response and enhanced fire and life safety inspections. In general, this staffing arrangement will lead to greatly enhanced provision of fire service.

Future Staffing

Fire department staffing models vary greatly across the province so establishing future staffing needs based on the experiences of other jurisdictions can be difficult. This being said, extrapolated population growth data does appear to be an effective indicators of fire department workload. Diagram 6 (below) shows that there is a strong correlation between population and three key measures of fire department workload.

Strong Correlation between Population and Workload (Diagram 6)



Extrapolating workload against future population figures (Diagram 7) suggests that as Squamish approaches 25 000 people, key areas of fire department workload will increase by a factor of 1.5; as the population hits 30 000, this workload is projected to be twice what it is today. Eight full time staff members are currently required to provide the level of service enjoyed by the community, so it can be estimated that by the time the community reaches 30 000 the Fire Rescue Department will require at least 16 full time staff. As shown in Diagram 7, staffing plans of similarly sized communities indicate that this is a realistic figure; most communities with populations of over 25 000 with fire department call volumes exceeding 1500 have at least one fire hall which is staffed 24 hours a day.

It is worth noting that there are some communities that do not follow this trend. The District of Mission, for example, has a population of 37 000 people and its department runs about 1700 calls; however its fire rescue service has only 13 full time staff. Mission's relatively low number of inspectable properties may allow it to keep personnel numbers low; however the staffing model may also be indicative of internal efficiencies which allow the department to run effective operations with fewer staff.

Recommendation

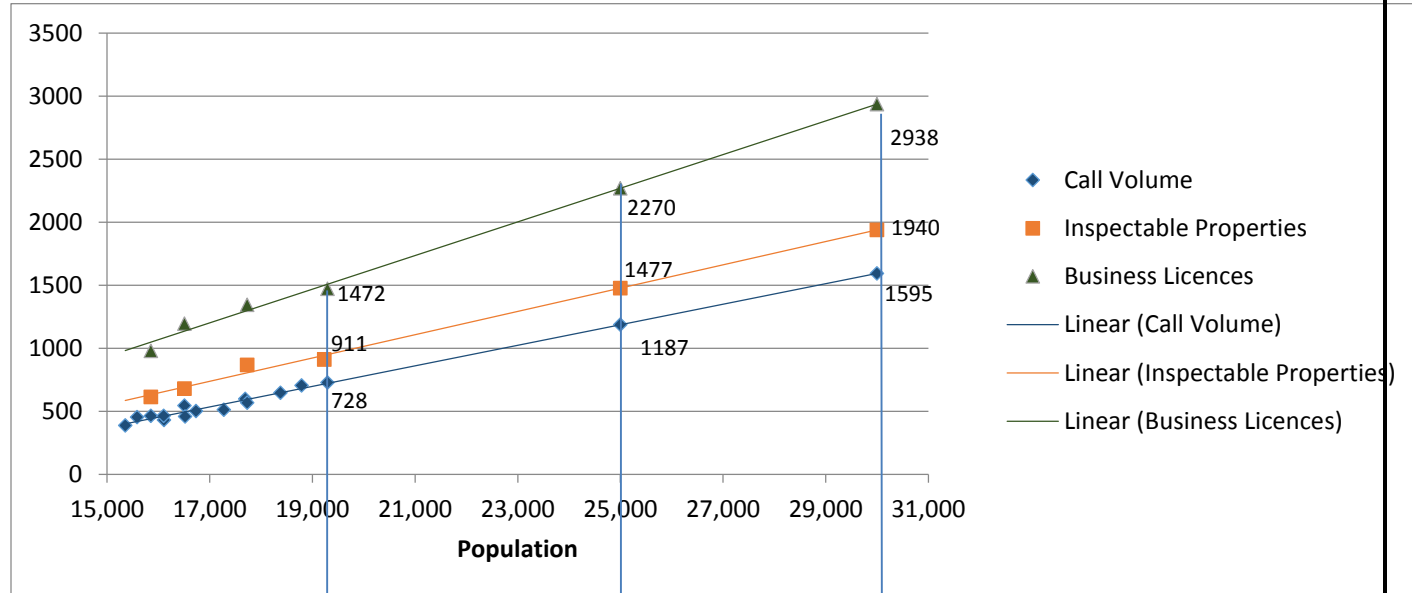
Based on anticipated workload and fire department staffing models of similar communities, it is suggested that the District of Squamish plan for a fire department of 16 full time staff by the time the population reaches 30 000 persons.

Since workloads are anticipated to increase significantly as the population climbs from 20 000 to 25 000, the District should plan for 12 full time staff members before the population hits this benchmark.

Note: Squamish Fire Rescue currently provides great service to the community and great value. As our community grows into the future, the department will continue to look for means of providing cost effective service. Growth figures listed do not represent “targets” that the department will aim to meet, but rather realistic figures that should be considered from a long range planning perspective.

District of Squamish - Projected Workload Vs. Population Growth (Diagram 7)

With reference to similar communities



Pitt Meadows

Population: 18 673
Fire Department
 Paid Staff: 5
 Inspections: 760
 Calls: 488

Fort St. John

Population: 21 523
Fire Department
 Paid Staff: 25
 Inspections: 1 500
 Calls: 800

West Kelowna

Population: 32 699
Fire Department
 Paid Staff: 39
 Inspections: 1 223
 Calls: 3 500

White Rock

Population: 19 197
Fire Department
 Paid Staff: 24
 Inspections: 750
 Calls: 1 532

Courtenay

Population: 24 806
Fire Department
 Paid Staff: 6
 Inspections: 1 450
 Calls: 685

Campbell River

Population: 32 720
Fire Department
 Paid Staff: 23
 Inspections: 1 400
 Calls: 2 600

Cranbrook

Population: 19 785
Fire Department
 Paid Staff: 23
 Inspections: 1 300
 Calls: 1 600

City of Langley

Population: 26 652
Fire Department
 Paid Staff: 24
 Inspections: 2 169
 Calls: 2 700

Mission

Population: 37 539
Fire Department
 Paid Staff: 13
 Inspections: 774
 Calls: 1 700

Volunteer Staffing

Squamish Fire Rescue is fortunate to have a stable roster of volunteer firefighters who are well trained and committed. Fire Hall #2 has sufficient numbers to support a two company system. This system sees one company on-call for emergency response for two weeks, while the other company is “off duty” and is only expected to respond to major incidents. This system of alternating on-duty shifts provides volunteer firefighters the opportunity to actively participate in emergency response as well as an ample amount of down time to re-charge and pursue other interests. This helps alleviate burnout and greatly assists with volunteer retention.

Hall #1 has fewer volunteers so they do not operate with an on-call system. As the community grows and call volume increases, the potential for volunteer burnout will become significant.

The fire department has set a goal of increasing volunteer numbers at Fire Hall #1 to enable a two company system within the next five years. Meeting this goal will have financial implications, as additional personnel will need to be trained and outfitted.

- Once a second company has been established, the department will require an additional \$20 000/year for volunteer training.
- During the five years that are required to reach target membership, \$52 500 will need to be spent on additional personal protective equipment.

Recommendation

It is recommended that the department continue with its plan to develop a second company of volunteer firefighters for Hall #1.

Conclusion

This document expands upon the foundation of the fire department master plan. Where the master plan gave strong recommendations for growth in many areas of departmental operations, it lacked somewhat in providing recommendations about mid to long range fire department staffing. This report aims to fill in these missing pieces of the master plan; as such it is suggested that this document be accepted as an addendum to The District of Squamish Master Fire Plan so that a fuller picture of the fire department’s future can be considered when planning to meet the challenges that will arise as the District of Squamish grows.

Appendix C - Table of Recommendations

	Goal	Priority	Target Completion
1	Ensure that Squamish Fire's career and volunteer staffing levels allow for the continuance of the department's current level of service	High	2022
2	Generate programs that will address known threats to firefighter health and safety	High	2019
3	Create succession plans and a culture of coaching	High	2018
4	Be fully compliant with the "Full Service" elements of the "Playbook"	High	2022
5	Increased utilization of accredited training programs.	Medium	2020
6	Create training programs that will enhance firefighter engagement and develop opportunities to expand course offerings with existing resources.	Medium	2019
7	To implement new and/or enhanced fire prevention measures which will reduce fire risks, and potentially reduce commercial fire insurance premiums, in a cost effective manner.	Medium	2022
8	To develop an enhanced relationship with stakeholders by taking advantage of opportunities for more community interaction.	Medium	2018
9	Increase community awareness of fire department activities through enhanced use of social and traditional media.	Medium	2018
10	Meet with Sea to Sky and North Shore fire departments to discover areas where efficiencies can be realized through greater collaboration.	Medium	2019
11	Enhance volunteer firefighter recruitment efforts within Squamish Nation communities.	Medium	2018
12	Replace the Number 2 Fire Hall or develop a <i>comprehensive</i> short term plan to conduct a major renovation of the building which will ensure post disaster stability and maximum usability of the existing space.	Very High	2020
13	Develop a plan to accommodate #1 Hall growth.	High	2022
14	Identify a location for a future #3 Hall in North Squamish.	Medium	2018