Dawson Creek Fire Department

Master Fire Plan

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1. Executive Summary

The Dawson Creek Fire Rescue Department (the “DCFRD” or the “Department”) is a composite department in that it is composed of career as well as volunteer firefighters. The majority of the membership is full time and by this measure it is considered a career fire department by the National Fire Protection Association (the “NFPA”).

The full time staffing complement is 20, made up of a Chief, a Deputy Chief, a Fire Prevention Captain, 4 Suppression Captains, 12 Firefighters and 1 Dispatcher/Clerk. At the present time, there are also 7 volunteers, although the Department would like to see this increased to 12. In practice, DCFRD volunteers are rarely called out to fires or other emergencies. This is likely one of the primary reasons retention of existing volunteers is an issue for the Department.

The DCFRD operates from a single fire hall in terms of centrality for its emergency calls within the City of Dawson Creek (the “City”). The location is suitable and there is no case to be made at the present time for a second fire hall. The Department responds to approximately 400 calls for service per year although the call volume has been dropping slightly over the past five years. Of these calls, approximately 30% are for alarms ringing and false alarms while an additional 30% are for motor vehicle incidents, ambulance assists and rescue calls. The DCFRD does not automatically respond to first medical responder calls from the BC Ambulance Service, but will respond to a specific request where the EMS crews are going to be delayed or otherwise require assistance.

The DCFRD has been reviewed by the Fire Underwriters, initially in 1986 and again in 2010. The most recent survey maintained the Public Fire Protection Classification Grade of 5, however the Dwelling Protection Grade was reduced from 2 to 3A.

The current review of the DCFRD was conducted in several phases. The first phase involved a detailed review of the previous Fire Underwriter Surveys, the Official Community Plan, the most recent budgets, history of response to incidents, the fire department bylaw, job descriptions and a written description of the fire apparatus. The second phase was conducted onsite in Dawson Creek in August and included a detailed survey of the response area as well as in-depth interviews with the Chief and Deputy, the Fire Prevention Officer, on-duty and off-duty firefighters and the dispatcher as well as the City’s Chief Administrative Officer. In addition, a detailed review of the facilities including the apparatus, the small equipment, the fire hall and the Department’s dispatch facility and training areas was conducted.

In the course of the review, the Consultants identified five major areas of the Department’s operations that require attention in the short to medium term: the replacement of apparatus; staffing; communications; training; and officer development. Of these, the most important are training and officer development.

Training at the present time is carried out almost exclusively at the fire hall; unfortunately the space allotted does not provide for effective training exercises such as flowing water, live fire

training, laddering and similar evolutions. This issue has also been raised as a concern by the Fire Underwriters in their recent survey (also referred to in this report as “FUS”).

We recommend that the DCFRD place a high priority on developing a training site to meet contemporary requirements. One location that might be suitable is the area to the west of the Dawson Creek Airport, a space that is currently used for some limited training. The property is owned by the City and would be a good location for a full training facility. Regardless of the location there is a requirement for sufficient classroom and training space also within the existing fire hall to ensure that all facets of the training program can be suitably delivered.

The second priority is linked to the first one and relates to the impending retirement of most if not all senior Captains within the next five years and the need to replace them with officers who will have the required competencies (knowledge, training and experience) to manage emergency responses to structure fires as well as all other incidents faced by the Department. The concern is that the firefighters who will become the next generation of officers within a very few years do not have a great deal of experience with structure fires. This is through no fault of their own, as there are relatively few structure fires annually and at the present time the median length of service by members of the DCFRD is five years.

The relative lack of structure fires in Dawson Creek coupled with a training site that does not provide for ‘live fire’ training along with full scenario based training exercises, underlines the urgent need for a concentrated fire officer development program. The program should include access to an enhanced training facility along with courses to provide new officers with the required skills, knowledge and hands-on training required of today’s fire officers. The recent agreement with the IAFF that all officers in the future will be trained to the NFPA 1021 Standard forms an excellent basis for future development. This agreement should be supplemented with an appropriate level of emergency incident management training. It is recognized that there is a cost to providing this enhanced training and one option would be for the Chief and/or Deputy to be trained initially and to subsequently train the crews.

The third issue of some urgency is the need to create and fill two firefighter positions to provide coverage for short term absences, and ensure that the Department meets the recommended standard minimum level of staffing on a sustained basis.

The fourth issue concerns the significant risks currently present in the operation of the dispatch service by the Department. The Department is responsible for providing dispatch services for itself and seven other departments[1] in the immediate vicinity. The DCFRD is to be commended for recently hiring a clerk/dispatcher and our initial review with her was very positive in terms of her skills and aptitude. That said, there are a number of single points of failure that could render the dispatch office inoperable. Moreover the Department lacks a backup or business continuity plan for its dispatching obligations and, although the likelihood of a catastrophic system failure is

[1] The Department provides dispatch services to Arras, Pouce Coupe, Tumbler Ridge, Hudsons Hope, Tomslake, Moberly Lake and Chetwynd.

relatively low, the consequences of such a failure are very high. This concern needs to be addressed as a matter of urgency.

The final issue relates to the plan for replacement of fire apparatus. In general terms, the DCFRD has replaced its apparatus on a reasonable timescale, but has not yet established a formal plan to do so. In this matter we concur with the Fire Underwriters and believe that a 20 year threshold for apparatus replacement should be agreed and built into the Department's capital planning. This capital plan should include upgrades to the apparatus as it is replaced in order to, among others things, provide the Department with a greater pumping capacity to meet water-flow requirements. There is also a need to acquire a substantially upgraded rescue unit to allow for all equipment required for light and medium rescue to be carried on board, in addition to all required emergency scene lighting and fire suppression capabilities for a vehicle of this type.

This report contains a number of additional recommendations along with suggested implementation timelines. These are mentioned in the body of the report and then summarized in a final section.

Finally it must be noted that in all of our discussions with the executive and members of the DCFRD we were impressed by their interest in the process, their care for the citizens of Dawson Creek and their passion to learn and grow. Notwithstanding the major items noted, the DCFRD is a good fire department that is prepared for the majority of challenges facing it and is well positioned for the changes that are recommended.

2. Administrative Review

Background

The DCFRD provides fire protection for the City and a portion of Electoral Area D within the Peace River Regional District (the "PRRD"). The population of Dawson Creek is estimated to be nearly 12,000 based on information from the BC Stats website.[2] A summary of the data is shown in Figure 1 and by this it appears that the population in Dawson Creek is growing at a rate nearly double that of British Columbia as a whole.

2 Population Estimates

Annual Estimates

Year	Dawson Crk	% Change Prev. Year	BC	% Change Prev. Year
2006	11,094	-	4,243,580	-
2007	11,290	1.8	4,309,632	1.6
2008	11,421	1.2	4,383,860	1.7
2009	11,529	0.9	4,460,292	1.7
2010	11,860	2.9	4,530,960	1.6

Age Distribution

2006 Census

	Dawson Crk	Male	Female
All ages	5,435	5,560	
0 - 14	1,205	1,060	
15 - 24	895	825	
25 - 44	1,520	1,550	
45 - 64	1,255	1,380	
65 +	550	745	

% Distribution, 2006 *

Dawson Crk	BC
100.0	100.0
20.6	16.5
15.6	13.1
27.9	27.4
24.0	28.4
11.8	14.6

Source: Statistics Canada (as of July 1, includes estimate of Census undercount)

** based on published totals, both sexes*

2006 Census Profiles can be found on our Website at http://www.bcstats.gov.bc.ca/census.asp

Figure 1: Population Estimates for Dawson Creek

Overall, development within the City is constrained by the Agricultural Land Reserve and any further development is likely to occur within the current municipal boundaries. It is expected that industrial growth will occur along the Alaska Highway and the designated Dangerous Good Route. Residential development is located in the north, central and south part of the City, and is expected to be more in-fill as opposed to any extension of boundaries.

The airport at Dawson Creek is owned by the City and provides only limited scheduled passenger service. The airport is frequently used by the oil and gas sector for crew management and there has been a significant amount of new development of hotels and other service oriented businesses in this area.

[2] www.bcstats.gov.bc.ca/census.asp

Legal Structure

Fire Departments are an optional service provided by local governments – either by regional districts or, as in the case of the Department, by municipalities. The powers, authority and responsibilities of a fire department need to be specified by bylaw, as there are no standardized powers. In the case of the Department, its governing bylaw is Bylaw No. 2686 (1988), "Fire Prevention and Control Bylaw" (the "Operational Bylaw"). This bylaw covers the Department's administration and operation, fire prevention and inspection responsibilities, and licences and permit requirements. It was amended slightly by Bylaw No. 2921 (1992), which changed certain provisions relating to open air burning.

The Operational Bylaw was passed nearly 25 years ago and could stand some refreshing. Various statutory references (such as to the *Municipal Act*) are now out of date. In general, however, the original drafter ensured that the Department was accorded a reasonably wide mandate and grant of powers. Certain activities of the Department, however, such as conducting fire inspections in the Village of Pouce Coupe or the provision of emergency dispatch services to other fire departments, are not specifically authorized under the Operational Bylaw.

Fire Department Administration and Operation

Under section 2.1 of the Operational Bylaw, the Fire Chief is appointed by Council. Council is also responsible for appointing, on the advice of the Fire Chief, the other officers in the Department (section 2.2). This provision seems unduly cumbersome, and the City might consider devolving approval of such appointments to the City's CAO.

Section 2.5 establishes the jurisdictional limits of the Department. The Department is entitled to respond out of jurisdiction in accordance with two agreements:

- The City of Dawson Creek/Peace River Regional District Fire Protection Agreement; and
- The Province of B.C./City of Dawson Creek Emergency Response Agreement.

We have not been provided with copies of the Province of BC agreement, and it is not clear whether it is still in force. We were provided with a copy of a mutual aid agreement between the Peace River Regional District (the "PRRD"), the Village of Pouce Coupe and the Tomslake Fire Department Society. There is also an agreement between the City and the PRRD under which the Department is contracted to provide services to the "Pouce Coupe Rural Fire Protection Specified Area." We have not been provided with a copy of the City's bylaw (if any) which approved the execution of this agreement.

Section 2.5 goes on, however, to permit the Fire Chief the power to authorize the Department to respond to incidents beyond the municipal borders. It should be noted, however, that this power

does not appear to be delegable.[3] As such, if the Fire Chief is absent, the Department would be required to obtain consent of Council to respond out of jurisdiction (which, in an interface situation, may create a dangerous delay).

We would recommend that this section be revised to permit the Department to respond out of jurisdiction:

- in circumstances where the Fire Chief (or delegate) or CAO[4] has approved the action;
- in accordance with a written mutual aid or service agreement;
- where an incident has occurred outside of the fire protection area, but which threatens or potentially threatens the fire protection area;
- in accordance with the agreement with the Emergency Health and Services Commission;
- in support of, or at the request of, Wildfire Management Branch in relation to a wildfire; or
- in accordance with orders received in connection with the declaration of a local state of emergency or declaration of a provincial state of emergency under the Emergency Program Act.

One issue that should be addressed in connection with out-of-jurisdiction responses is obtaining the permission of the PRRD to respond into PRRD territory. While the City has the power to authorize the Department to leave the municipal borders, it cannot grant the Department any powers to operate in an area governed by a different local government (in this case, the PRRD). As such, a blanket agreement permitting (though not requiring) the Department to respond to the foreseeable types of events (such as wildland – urban interface fires) should be developed. Obviously, operations in any other municipality should be governed by an appropriate mutual aid agreement. In each case, the agreement should specify the Department's powers when it is responding.[5]

What this arrangement would not do is create any type of obligation on the Department to effect such a response in unprotected PRRD territory. In other words, the PRRD would grant permission; it would be entirely up to the Department (and the City) as to whether such a response occurs.

Absent such an agreement, in theory the Department must await the declaration of a local state of emergency encompassing the region in question, or other permission from the PRRD, before it can respond into PRRD territory.

[3] There is nothing in the section that suggests the power can be delegated to another officer and the definition of "Fire Chief" also does not suggest that the term can be used to mean another officer in the Department to whom a task has been delegated.

[4] This list can be expanded to include the Mayor and Deputy Mayor, as well.

[5] In particular, it needs to be clear that the Department has the authority to pass over, or station itself on, private land. Absent that authority, there is the potential that the Department would be trespassing.

Section 2.6 gives the Fire Chief authority over the Department (subject to direction and control of Council) and empowers him or her to carry out:

- Fire protection activities;
- Rescue;
- Disaster planning;
- Preventative inspections and patrols; and
- Other activities as Council directs.

The definition of "fire protection" is usefully broad, as it covers: "all aspects of fire safety including but not limited to fire prevention, fire fighting or suppression, pre-fire planning, fire investigation, public education and information, training or other staff development and advising."[6]

The Department provides some support to B.C. Ambulance under the terms of a First Responder Agreement (Consent and Indemnity), dated 7 July 2009, with the Emergency Health and Services Commission.[7] We would note that first medical responder services are not specifically authorized under the Operational Bylaw. Any revised bylaw should expressly permit this type of activity.

Section 2.7 gives the Fire Chief authority to manage the Department (subject to Council's oversight). One issue that should explicitly be added to the list of administrative matters is occupational health and safety ("OH&S") and the operation of an OH&S Committee in accordance with the requirements of WorkSafe BC.

Section 2.12 deals with situations where the Department needs to pass over other properties to gain access to a fire or emergency incident. The section refers to properties "adjacent" to the incident, which might be overly narrow. Consideration should be given to permitting the Department the right to pass over or through other properties "as required" to gain access to an incident.

Section 3.1 adopts the "National Fire Code of Canada" (subject to the *Fire Services Act* (B.C.) and the British Columbia Fire Code Regulations) into the bylaw. If the City updates this bylaw, this formulation should be reviewed with its legal counsel to ensure that this formulation is appropriate.

Section 3.3 limits the power to enter premises for fire inspection purposes to the Fire Chief or other members of the Fire Department who have been "authorized by Council". The City may wish to enable the Fire Chief to designate members who will have this power (since it is unlikely the Fire Chief is conducting the fire inspections).

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[6] Bylaw No. 2686 (1988) Part 1 - definitions.

[7] The Department averages about 8 calls per year. It responds only when the BCAS is unavailable.

We have not reviewed the open air burning or similar regulations. If the bylaw is updated, more modern formulations of these rules can easily be found.

Recommendations

1. Recommendation #1: That the existing Operational Bylaw be reviewed and updated, to ensure that all of the Department's existing activities are properly authorized, and to streamline certain reporting lines.

2. Recommendation #2: That the City enter into an agreement with the PRRD which would permit the Department, at the Department's sole discretion, to operate in the unprotected PRRD territory outside of the existing fire protection boundaries. This arrangement would enable the Department to respond to (for example) wildland-urban interface situations or other events which potentially threaten its fire protection area.

Mutual Aid Agreement

We have been provided with a copy of a mutual aid agreement (the "Mutual Aid Agreement") dated 8 December 2006, made between the PRRD, the City, the Village of Pouce Coupe and the Tomslake Fire Department Society. The Mutual Aid Agreement has a five year term, expiring on 8 December 2011.

Recitals. The relationship between the PRRD and the Tomslake Fire Department Society (the "Society") should be better described. It should be noted that the PRRD itself is not providing a fire department under the agreement; rather, it is authorizing a response by its service provider (the Society).

Definitions. While a number of refinements can be contemplated, at a minimum there should be introduced the concept of a defined term of "Fire Department", which would encompass and properly describe each of the three fire departments involved. The terms "Providing Party" and "Requesting Party" would then be replaced with the terms "Requesting Fire Department" and "Responding Fire Department" (since it is the fire departments, not the parties *per se*, who are engaged in the responses under the Mutual Aid Agreement). This would help reduce some of the drafting complications evident in other provisions of the Mutual Aid Agreement.

Section 2 – Request for assistance. Section 2 establishes the right of a Fire Chief of a particular department to request assistance. This right, however, is modified by section 8 which reads:

> "It is further understood and agreed by and between the parties hereto that the jurisdiction in which the **emergency** occurs will utilize its full complement of firefighters prior to calling for assistance." [Bold in original.]

As a matter of organization, any limitation on the right to request assistance should be built into the section dealing with that issue (or be the next following section). In addition, the language in section 8 is not the best formulation of this limitation. Strictly applied, it could conceivably lead

to delays before mutual aid is requested. A better formulation is that the request can be made when, in the view of the Requesting Department, the emergency is, or is likely to be, of a nature or size that is beyond the ability of the Requesting Department to manage.

Section 4 – "No action or claim".

This provision is intended to prevent a Requesting Party from commencing an action against a Responding Party as a result of a decision concerning the provision of emergency resources. The same concept, however, is also dealt with in section 13. It would be better to combine the two provisions into a single section, to avoid potential confusion.

Sections 5 and 6 – Incident Command.

Incident command at mutual aid events is covered by sections 5 and 6, respectively:

> 5. The Fire Chief of the Fire Department that is fighting a fire within its own boundaries shall be responsible for the overall direction and control of fighting the fire.
>
> 6. It is understood and agreed by and between the parties hereto that the responding parties hereto [*sic*] that the responding Fire Departments [*sic*] personnel and equipment will remain under the control of the responding Fire Department's Fire Chief.

There are some obvious drafting errors in section 6. Taken together, however, we would recommend that these sections should be amended to provide that the incident command system as contemplated by the B.C. Emergency Response Management System would apply. This system is well recognized throughout the province and provides a coherent approach to managing large scale, multi-department and multi-agency events.

These sections also should address situations where the mutual aid department arrives on scene and takes control of responding to an emergency before the Requesting Department has arrived. This scenario can arise in certain border situations; it can also arise where the Requesting Department is delayed in its response because it is already managing another incident within its boundaries.

Sections 11 / 12. The parties have established an indemnity in favour of Responding Departments, but it does not extend to negligence on the part of those departments. That means that a Responding Department needs to ensure that its liability coverage extends to include mutual aid/out of jurisdiction responses. This is not an issue for policies issued by the Municipal Insurance Association, but if a department – such as Tomslake – has a privately issued insurance policy, coverage should be confirmed. Some mutual aid agreements contain specific insurance requirements that need to be produced, either annually or on request of another party.

Other Issues. Ideally, the Mutual Aid Agreement would address or cover a number of other issues, including:

(a) establishing a committee of the fire chiefs to address matters such as:

- ensuring that the participating departments' operational guidelines are consistent (so each department approaches matters in a consistent fashion, including incident command),
- ensuring that there is a way rapidly to identify the training levels of responding mutual aid personnel,
- the development of joint training exercises between the participating departments, and
- reviewing how mutual aid responses have worked or dealt with issues or concerns arising from such responses;

(b) an explicit discussion of the powers of a responding mutual aid department when in another department's response area. Language like this (or a variation thereon) should be considered:

> "Firefighters of a Responding Department shall have all of the powers and authority granted to Firefighters of the Requesting Department under the relevant bylaw(s) governing the operations of the Requesting Department, to operate at and control the scene of an Emergency Incident. Each Party and each Fire Chief, hereby grants all necessary designations or authorities to provide such powers and authority to the Firefighters of each Responding Department in connection with their operations at the scene of an Emergency Incident."

The parties should review the bylaws which grant powers and authorities to their respective fire departments. Ideally, these bylaws should be made consistent, so that each fire department has substantively equivalent powers to respond to and manage emergency incidents;

(c) ensuring that the area dispatch provider is aware of the mutual aid agreement (and any changes to it). The parties may also look to develop a provision where dispatch would automatically initiate mutual aid where it knows that the Requesting Department is already engaged on another call (so, Department A gets a call to a structure fire in its area; dispatch then receives a call of a second structure fire in the same response zone. In that case, it would automatically summon mutual aid);

(d) where a department is not going to respond to a mutual aid call out for whatever reason, the Mutual Aid Agreement should have a provision dealing with how the Requesting Department is informed of this;

(e) some mutual aid agreements expressly address minimum required insurance levels;

(f) it is worth considering whether "consumables" expended by a Responding Department should be reimbursed by the Requesting Department (even if there is not going to be any amounts paid for an actual response);

(g) in terms of renewal, if possible the parties should consider whether the Mutual Aid Agreement should automatically renew for additional one year terms, following an initial term (unless a party indicates that it wishes to withdraw). Given the importance of mutual aid and the impact if a party were to withdraw, it may also be worth considering making the termination period somewhat longer than 90 days (say, not less than 6 months' notice).

Recommendations

3. Recommendation #3: The mutual aid agreement must be formally re-instated. We would recommend that the Department and the City review the issues described in the above section when re-negotiating the agreement with the PRRD. The City also should review the terms of the Mutual Aid Agreement with its counsel.

Fire Service Agreement

The Department provides fire suppression and related services to the PRRD under the terms of an agreement dated 1 January 2007 (the "Fire Service Agreement"). The services are provided to the "Dawson Creek-Pouce Coupe Rural Fire Protection Specified Area" (the "Specified Area") which appears to include a portion of Electoral Area D of the PRRD and the Village of Pouce Coupe. The Fire Service Agreement has a five year term, expiring on 31 December 2011.

Under the terms of this agreement, the Department has agreed to provide "rural fire protection and control service" in the Specified Area, which includes:

- answering all fire emergency calls;
- attending at fire emergencies "with all necessary equipment for the purpose of controlling and extinguishing fires and providing emergency services,";
- conducting fire inspections of premises;
- conducting fire investigations; and
- coordinating and implementing services necessary for or incidental to the investigation, prevention and suppression of fires and related emergencies or matters.[8]

The City commits to have "all necessary personnel and [to] maintain and operate all necessary equipment" to provide the contemplated services.[9]

[8] Section 1.1 of the Fire Service Agreement.

[9] Section 1.2 of the Fire Service Agreement.

The Fire Service Agreement establishes a Fire Department Management Committee comprising the electoral area director for Electoral Area D of the PRRD, the Mayor (or designate) of the City of Dawson Creek and the Mayor (or designate) of the Village of Pouce Coupe. This management committee is responsible for providing a communications link with the PRRD, reviewing budgetary matters, reviewing major capital expenditures by the Department or any proposed expansion of the "Fire Protection Area", and reviewing and recommending solutions to any disputes that may arise in relation to the Fire Service Agreement.[10]

Under section 11.4, the PRRD indemnifies the City against claims arising under or in relation to the provision of services under the Fire Services Agreement, except where the claims are attributable to the negligence of the City or is for a breach of the Fire Service Agreement itself.

We would recommend that the City review the terms of this agreement with it counsel when it is renewed. Our comments, which should not be treated as either legal advice or exhaustive, are as follows:

i. The definition of services provided and the commitment to provide equipment, staffing and responses should be tightened up. The City should not commit to providing any additional service, equipment or staffing beyond that which it determines, in its sole discretion, is reasonably necessary to respond to anticipated emergencies (and no claim should lie against the City in this respect). It also should define more specifically the emergencies to which the Department will respond and note that responses into the Specified Area will generally take longer than responses in the City (given travel times). The agreement also should expressly note that the Department's ability to respond may be affected by other incidents occurring at the same time.

ii. The indemnity should be expanded to cover the refinements noted above. In essence, the Specified Area should receive the service as the Department is constituted and able to provide on an "as is" basis. Any input that the Specified Area has in relation to the quality or nature of the service should be confined to the input provided by the Management Committee.

iii. The City and the PRRD should determine whether it actually is intended that the Department provide fire inspections in Electoral Area D (as opposed to the Village of Pouce Coupe).[11] If that is intended, then an appropriate fire inspections bylaw for the Electoral Area should be implemented and a separate agreement covering fire inspections should created. The fire inspection service

[10] Section 6 of the Fire Services Agreement.

[11] Under section 26 of the *Fire Services Act* (B.C.), a municipality is required to provide a system of "regular" fire inspections for "hotels and public buildings". Fire inspections are not required in unincorporated areas.

provided to the Village of Pouce Coupe is dealt with in a separate agreement. This agreement should be cross-referenced in the Fire Service Agreement.

iv. The Fire Services Agreement should specifically acknowledge (and grant) powers to the Department to operate in the Specified Area. The powers granted should be the same as those given to the Department under its Operational Bylaw (as that bylaw may be amended).

4. Recommendation #4: The City should review the terms under which it provides fire protection services to the Specified Area. The existing agreement should be reviewed with counsel and revised as appropriate to more clearly define and limit the obligation to provide services.

Administration

The DCFRD is managed directly by a Fire Chief and a Deputy Chief. There are Captains assigned to each of four shifts; as well there is an Office Assistant / Dispatcher and a Captain of Fire Prevention. The organizational chart is shown in Figure 2.

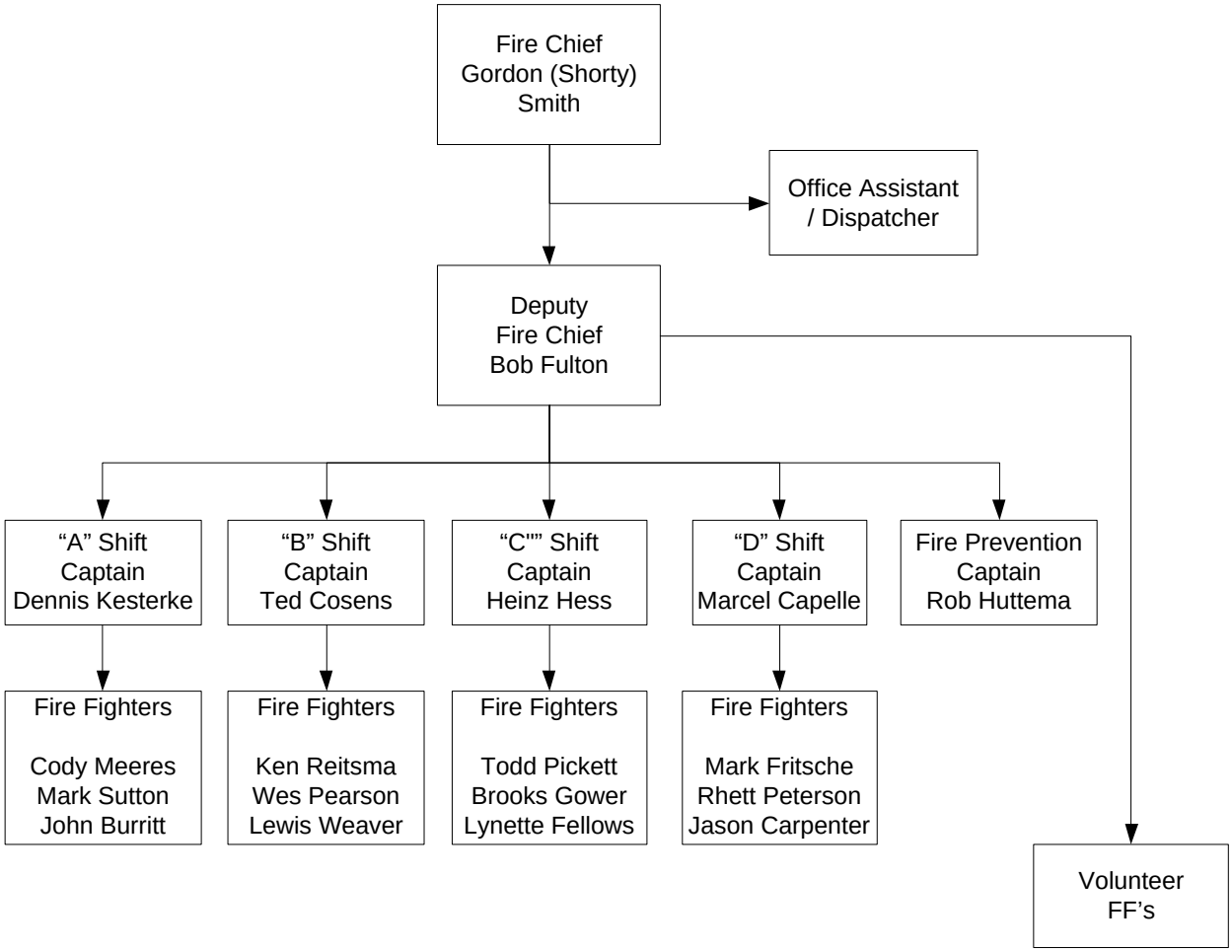

Figure 2: DCFRD Organizational Chart

The organizational structure was reviewed with Chief Smith and it is felt that it provides the appropriate level of oversight for administration and operations. No changes are recommended at this time.

Inspection & Audit

The DCFRD was also reviewed using an inspection and audit model that was developed by the Office of the Fire Commissioner following the death of a firefighter in Clearwater in 2005. The topics include governance and authority, health and safety and qualifications and standards. The format for this was revised with input from a committee of the Fire Chiefs' Association of BC in 2010 and was used as a basis for an analysis of the DCFRD. In our review, the DCFRD scored very well in terms of the criteria.

3. Standards of Service

NFPA 1221

One of the principal requirements for a fire department is to provide timely response to emergency fire, rescue and medical assist events. This is in addition to the non-emergency responses such as fire inspections, public education, pre-planning and other less visible activities where these are part of a fire department's mandate. The former activities are the ones with the highest profile, and the ones with the largest degree of risk to residents, property owners and responding firefighters; for all of these, the NFPA 1221[12] standard applies in terms of emergency call handling and dispatch.

In every sense of the expression, fire, rescue and medical responses are 'mission critical' and it is useful to understand the series of steps that must take place between the call for assistance by a resident and the arrival on scene of a fire department crew. Each of the steps that will be described can in most cases be analyzed to understand the total time until arrival of firefighters using real-time data from existing systems[13]. Where this data is non-existent in a computer aided dispatch (CAD) system, it can be measured by direct observation.

Figure 3 that follows summarizes the processes from the point at which an incident occurs and a call for help is placed. This illustrates how the communication steps (the 9-1-1 process is shown in light blue/green, the fire dispatch is shown in orange) are gating items for the completion of response and arrival activities of the fire service (shown in red).

[12] NFPA 1221: Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems, 2010 edition, ©National Fire Protection Association. The National Fire Protection Association is an international collaborative organization that establishes peer-reviewed standards for various aspects of the fire services and other emergency agencies.

[13] This data would be found in computer aided dispatch or record management systems; the DCFRD has data suitable for analysis from the RMS system

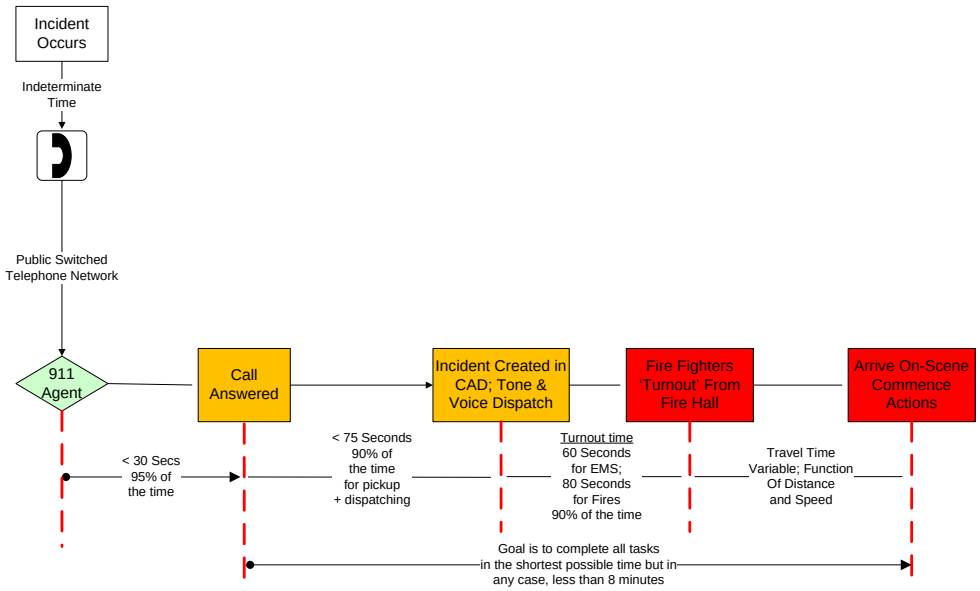

Figure 3: Event Sequence for Emergency Call Handling, Response and Arrival

Each of these steps from the time the caller reaches the 9-1-1 centre, until the arrival of the fire apparatus at the scene is part of a sequence for which peer reviewed response time objectives have been identified. The standards of service for emergency communications in the fire service are described in the NFPA Standard 1221 as noted. This standard provides an analysis model for key steps involved with emergency call taking and dispatch and prescribes time milestones in which these should occur[14]. It should also be noted that the call management response time objectives in NFPA 1221 apply equally to the career, composite and volunteer fire services.

In summary, the expectation is that all emergency calls for service will be answered, the caller will be interrogated, the 'call' will be created on paper or in a computer aided dispatch system, and the tones and information will be sent to the responding firefighters within 60 seconds, 90% of the time.

A primary mandate of any fire department is to provide for a timely response to fire and medical emergencies, as well as hazardous materials, technical rescue and other public safety interventions. In the vast majority of these, crews respond from a fire hall and travel some distance to the incident.

The NFPA has developed an analysis of a standard fire situation that addresses the need for a timely response. The graph shown in the following figure is from the NFPA[15] standard and

[14] NFPA 1221 additionally defines a standard with regard to business continuity, security, power and other system redundancies, CAD system operation, etc.

[15] The standard for the management of substantially career fire departments is NFPA 1710, the standard for essentially volunteer fire departments is NFPA 1720 and although it identifies a different approach to arrival on scene with a certain number of fire fightersfirefighters, the essence of the fire propagation curve

demonstrates the expected fire propagation curve, which indicates the point at which a fire is expected to spread beyond the room of origin. This is normally at or about 8 minutes from the point of ignition.

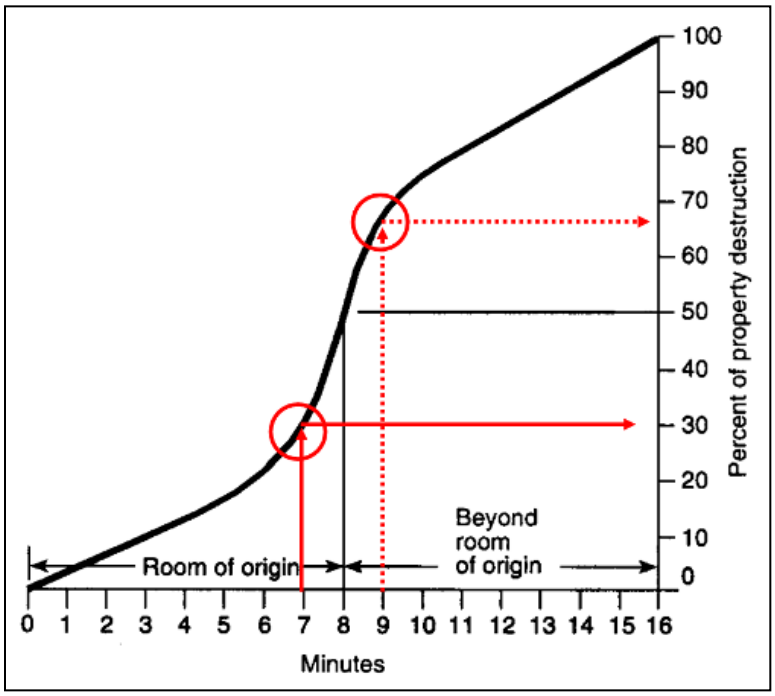

Figure 4: Fire Propagation Curve, Modeled from NFPA 1710

From this graph it can be seen that in the range of time from 7 to 9 minutes after ignition, a fire is expected to rapidly accelerate and the percentage of property destruction (shown on the Y axis) increases from approximately 30% to nearly 70%. At some point in this short period of time, the assumption is that the fire will spread beyond the room of origin.

The significant point is that each of the steps in the fire department's response sequence, including 9-1-1 call processing, call assessment, dispatch, turnout and travel time should all occur prior to the time when a fire will extend beyond the room of origin, thereby creating a much higher risk to life and property. In this regard, the NFPA notes:

> *In Figure A.5.2.2.2.1, [Figure 4 above] the line represents a rate of fire propagation in an unsprinklered room, which combines temperature rise and time. It roughly corresponds to the percentage of property destruction. At approximately 10 minutes into the fire sequence, the hypothetical room of origin flashes over. Extension outside the room begins at this point.*

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as shown in Figure 3 applies to all fires regardless of whether the department is career, composite or volunteer.

> *Consequently, given that the progression of a structure fire to the point of flashover (i.e., the very rapid spreading of the fire due to superheating of room contents and other combustibles) generally occurs in less than 10 minutes, two of the most important elements in limiting fire spread are the quick arrival of sufficient numbers of personnel and equipment to attack and extinguish the fire as close to the point of its origin as possible*[16].

The key element going forward is the requirement to manage all parts of the response equation as quickly as possible. This includes the strategic location of fire halls to provide the timeliest response to fires and other emergencies.

NFPA 1710

The standard of service that applies to the operation of a department such as the DCFRD is the NFPA 1710, titled *Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*. The standard was most recently revised in 2010 and as with all NFPA standards it is developed by a consensus process.

The NFPA standards are not absolutely mandatory in Canada although an increasing number of them are. These include many references in Section 31 of the WorkSafeBC regulations as well as with all matters related to training for which a Minister's Order applies.

The standard addresses a great number of issues including turnout and travel times from the fire hall for the first arriving unit and all those responding to a report of a structure fire. The NFPA also discusses staffing levels for fire apparatus, and this is also reflected in the FUS report.

In terms of staffing the standard prescribes a minimum of 15 firefighters including chief officers for structure fires. It also considers the minimum staffing of fire apparatus such as pumpers or engine companies to be 4 firefighters[17] including an officer and where higher hazards exist to staff these units with 5 or 6 firefighters.

The standard also outlines the requirement for an expeditious turnout from the fire hall and states that this 'turnout time' shall not exceed 60 seconds for fire calls or 80 seconds for medical responses[18]. This turnout time is a requirement to support arrival at a fire scene within the time period prior to flashover.

[16] NFPA 1710, 2010 edition, A.5.2.2.2.1

[17] NFPA 1710, 2010 edition, 5.2.3.1

[18] NFPA 1710, 2010 edition, 4.1.2.1

4. Operational Review

Staffing

The age and experience profile of the DCFRD is similar to a number of departments we have worked with where the age and experience profile has been dramatically lowered in recent years. In the case of the Department, this is a result of it hiring additional staff without a high turnover in the senior or officer positions.

The following table lists the existing staff, with the exception of the clerk/dispatcher, by position and shows their age and experience (within the DCFRD only) and calculates their age + service time and projects this for 10 years. Retirement at 60 is contractual and is agreed by the City and that age is shown for each individual and appears in the table as an amber background. In general, this is the expected maximum age for most career members of the fire service in BC.

The second item (age + service) indicates for most people when their combination of age and service reaches the point at which most firefighters consider retirement, that is when the sum of these equals 85. This is by no means a requirement but provides a realistic guideline for when the DCFRD should at least anticipate members may retire.

On the basis of this it is not unreasonable to assume that 3 or 4 members of the DCFRD (three of which are likely to be Captains) will be eligible to retire by 2015 and that the Deputy Chief may also choose to retire on or before this time. For these reasons the Department could see most, if not all, of its Captains and Chief Officers retire within 5-6 years for firefighters and Captains and within 1-3 years for Chief Officers.

If that is the case, then the next Captains and acting Captains would be those individuals who at the present time have as little as 4 years' experience and their preparation to perform safely and competently as command officers must be addressed. The issue of the training facility is discussed elsewhere, but in addition to a training facility, the DCFRD must, as a matter of some urgency, have these individuals prepared to assume command at fire incidents within 3-5 years.

The preparation for this has begun to be addressed with the requirement to have NFPA 1021 as a minimum standard for the Department's officers. This should be supplemented by live fire training, an appropriate level of emergency incident management training and other opportunities to have these individuals prepared for the role of incident commander as soon as possible.

Recommendations

5. Recommendation #5: The DCFRD consider it a high priority to provide fire officer training for all firefighters who will be promoted as Captain or acting in the rank of Captain within the next 3-5 years. This training is to meet the requirements of the NFPA 1021 Standard for Fire Officer Professional Qualifications, 2009 Edition (including live fire and emergency incident management training) as a minimum.

		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Fire Fighter	Age	21	22	23	24	25	26	27	28	29	30	31
	Service	1	2	3	4	5	6	7	8	9	10	11
	Age + Service	22	24	26	28	30	32	34	36	38	40	42
Fire Fighter	Age	36	37	38	39	40	41	42	43	44	45	46
	Service	2	3	4	5	6	7	8	9	10	11	12
	Age + Service	38	40	42	44	46	48	50	52	54	56	58
Fire Fighter	Age	36	37	38	39	40	41	42	43	44	45	46
	Service	2	3	4	5	6	7	8	9	10	11	12
	Age + Service	**38**	**40**	**42**	**44**	**46**	**48**	**50**	**52**	**54**	**56**	**58**
FP Captain	Age	42	43	44	45	46	47	48	49	50	51	52
	Service	2	3	4	5	6	7	8	9	10	11	12
	Age + Service	**44**	**46**	**48**	**50**	**52**	**54**	**56**	**58**	**60**	**62**	**64**
Fire Fighter	Age	36	37	38	39	40	41	42	43	44	45	46
	Service	3	4	5	6	7	8	9	10	11	12	13
	Age + Service	**39**	**41**	**43**	**45**	**47**	**49**	**51**	**53**	**55**	**57**	**59**
Fire Fighter	Age	32	33	34	35	36	37	38	39	40	41	42
	Service	4	5	6	7	8	9	10	11	12	13	14
	Age + Service	**36**	**38**	**40**	**42**	**44**	**46**	**48**	**50**	**52**	**54**	**56**
Fire Fighter	Age	37	38	39	40	41	42	43	44	45	46	47
	Service	4	5	6	7	8	9	10	11	12	13	14
	Age + Service	**41**	**43**	**45**	**47**	**49**	**51**	**53**	**55**	**57**	**59**	**61**
Fire Fighter	Age	45	46	47	48	49	50	51	52	53	54	55
	Service	4	5	6	7	8	9	10	11	12	13	14
	Age + Service	49	**51**	**53**	**55**	**57**	**59**	**61**	**63**	**65**	**67**	**69**
Fire Fighter	Age	30	31	32	33	34	35	36	37	38	39	40
	Service	5	6	7	8	9	10	11	12	13	14	15
	Age + Service	35	**37**	**39**	**41**	**43**	**45**	**47**	**49**	**51**	**53**	**55**
Deputy Chief	Age	59	60	61	62	63	64	65	66	67	68	69
	Service	5	6	7	8	9	10	11	12	13	14	15
	Age + Service	**64**	**66**	**68**	**70**	**72**	**74**	**76**	**78**	**80**	**82**	**84**
Fire Fighter	Age	28	29	30	31	32	33	34	35	36	37	38
	Service	6	7	8	9	10	11	12	13	14	15	16
	Age + Service	**34**	**36**	**38**	**40**	**42**	**44**	**46**	**48**	**50**	**52**	**54**
Fire Fighter	Age	30	31	32	33	34	35	36	37	38	39	40
	Service	6	7	8	9	10	11	12	13	14	15	16
	Age + Service	**36**	**38**	**40**	**42**	**44**	**46**	**48**	**50**	**52**	**54**	**56**
Fire Chief	Age	54	55	56	57	58	59	60	61	62	63	64
	Service	13	14	15	16	17	18	19	20	21	22	23
	Age + Service	**67**	**69**	**71**	**73**	**75**	**77**	**79**	**81**	**83**	**85**	**87**
Fire Fighter	Age	34	35	36	37	38	39	40	41	42	43	44
	Service	11	12	13	14	15	16	17	18	19	20	21
	Age + Service	**45**	**47**	**49**	**51**	**53**	**55**	**57**	**59**	**61**	**63**	**65**
Fire Fighter	Age	46	47	48	49	50	51	52	53	54	55	56
	Service	12	13	14	15	16	17	18	19	20	21	22
	Age + Service	**58**	**60**	**62**	**64**	**66**	**68**	**70**	**72**	**74**	**76**	**78**
Captain	Age	46	47	48	49	50	51	52	53	54	55	56
	Service	12	13	14	15	16	17	18	19	20	21	22
	Age + Service	**58**	**60**	**62**	**64**	**66**	**68**	**70**	**72**	**74**	**76**	**78**
Captain	Age	51	52	53	54	55	56	57	58	59	60	61
	Service	28	29	30	31	32	33	34	35	36	37	38
	Age + Service	**79**	**81**	**83**	**85**	**87**	**89**	**91**	**93**	**95**	**97**	**99**
Captain	Age	52	53	54	55	56	57	58	59	60	61	62
	Service	28	29	30	31	32	33	34	35	36	37	38
	Age + Service	**80**	**82**	**84**	**86**	**88**	**90**	**92**	**94**	**96**	**98**	**100**
Captain	Age	56	57	58	59	60	61	62	63	64	65	66
	Service	29	30	31	32	33	34	35	36	37	38	39
	Age + Service	**85**	**87**	**89**	**91**	**93**	**95**	**97**	**99**	**101**	**103**	**105**

Table 1: Staffing, Age and Experience Profile

Apparatus

The DCFRD responds with a total of 6 units in addition to the duty vehicles provided to the Chief and Deputy Chief.

1. Engine 1 (owned by the PRRD)
   a. 2007 Hub-Spartan
   b. 1250 Gallons per Minute (GPM); carries 700 Gallons of water
   c. Ladders include 10', 14' and 35'
2. Engine 2
   a. 1993 Spartan
   b. 1050 GPM; carries 600 Gallons of water
   c. Ladders include 10', 14' and 35'
3. Tanker 3 (owned by the PRRD)
   a. 1996 International
   b. 300 GPM discharge pump; carries 1,500 Gallons of water
4. Ladder 4
   a. 2001 HME
   b. 1250 GPM; carries 350 Gallons of water
   c. Ladders include 75' aerial ladder + various ground ladders
5. Rescue 5
   a. 2001 Ford F-550
   b. Carries various rescue tools
   c. Portable pump; carries 130 Gallons of water
6. Command 8
   a. 2001 Dodge Pickup

The apparatus is maintained locally and there are no concerns in this regard. Day-to-day maintenance is provided by the on-duty crew while more major issues are handled by the public works shop.

In terms of replacement, Engine 2 will reach 20 years of age in 2013 at which time it should be replaced. In addition it is recommended that the DCFRD should expand its fleet with a third engine[19]. This would ensure that a minimum of two would be available at all times, allowing for more extended periods of downtime for repairs when this is required. Providing a third engine unit would also allow for an engine unit to be staffed for a second fire, when the existing two engines have responded to a structure fire or other major incident.

Given a recommended 20 year life span for engines, replacement of one unit should be scheduled every 6 to 7 years. Each of these is a significant capital cost and it may be useful to accrue funds on an annual basis to avoid balloon payments or heavy finance costs. A notional schedule for apparatus replacement is shown in the table 2.

[19] The need for a third engine was also raised by the Fire Underwriters.

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
	Engine (1 of 3)							Engine (2 of 3)							Engine (3 of 3)	
									Ladder							
Rescue																

Table 2: Apparatus Replacement Schedule

It is also recommended that the current rescue unit be replaced with a heavier-duty unit that could also function as an equipment vehicle to support fire and rescue operations. The DCFRD is required at times to respond some distance from Dawson Creek in all weather conditions and a more robust unit with additional equipment such as cribbing and air bags for rescue, compressed-air foam capability, lighting and other features are recommended to support rescue and recovery.

Another viable option to having the 3rd engine as noted above would be to replace the current rescue truck with a rescue/pumper[20]. This would provide the Department with a much needed heavy-duty rescue unit and in addition meet the FUS suggested recommendation of having a 3rd engine available when required.

6. Recommendation #6: That the DCFRD increase the number of in-service engines from 2, to 3 and that engine units be replaced on a 20-year cycle.

7. Recommendation #7: That the DCFRD replace the current rescue unit with a larger, better equipped unit for highway rescue that could also provide support at fire and other emergencies as an equipment truck.

8. Recommendation #8: That the DCFRD develop a forward budgeting process to accrue funds for the regular replacement of all first-line fire response units.

Training

The fire service has made significant changes over the past 10 years, particularly with regard to regulations and standards related to managerial and administrative aspects of the service (such as the increased requirement for record keeping). Notwithstanding those improvements, the key component to ensuring effective emergency ground operations and the safety of firefighters and members of the public continues to be effective and comprehensive training. Each member of the organization must have the appropriate level of training in a variety of areas to suit the roles and tasks he or she will be assigned at an emergency incident. As with the managerial and administrative aspects of the fire service, significant changes have come in the area of training, both from an actual operations perspective - “let’s do it better and safer” and in terms of increased standards and regulations. To enable the DCFRD to manage its obligations effectively, it is vital to ensure that all firefighters are trained to the appropriate level for the

[20] A rescue/pumper is best described as a fire apparatus meeting the basic requirements of a triple combination pumper i.e. hose, water pump and ladders (for FUS purposes) but primarily equipped and operated as a rescue vehicle.

operations which they undertake. Appropriate training will improve firefighter safety and effectiveness and limit liability concerns for both the Department and the City.

The nature of modern construction techniques has amplified the risks faced by firefighters and the public. Lightweight construction components and contents made of composites, synthetics and other unusual fuels, cause fires to burn hotter, faster and with less predictability, creating a much more volatile fire environment than that of the past. Although firefighters are now better equipped, fires today pose a greater risk than those faced in the 1970s and 1980s. Having recognized this, the fire service is now placing a much greater emphasis on firefighter safety, with particular focus on interior operations, and seeking to manage the degree of risk to which firefighters are exposed. This is accomplished by increased levels of comprehensive emergency incident training – the knowledge and various skills required to safely and effectively perform a variety of functions at emergency incidents.

In an effort to provide for the safety of their communities, many fire departments provide additional emergency services such as first medical responder, auto-extrication, rope rescue and other specialty services. Given that the principal mandate of fire departments is to provide fire protection, the primary focus of this review is on the training required for the members – the "firefighters" – to conduct fire suppression operations.

The Province has established the training standards applicable to the fire service under the terms of a ministerial order (the "Minister's Order") issued pursuant to the *Fire Services Act* (B.C.). The Minister's Order reads as follows:

> "Further to the authority granted by Section 3(3)(b) of the *Fire Services Act*, the training standards for fire service personnel in British Columbia are those published by the National Fire Protection Association, effective January 1, 2003. Previous editions of the British Columbia fire service training standards are hereby rescinded."

The Minister's Order therefore sets the NFPA Standards as the basis for fire service training. Ideally, this would mean achieving NFPA 1001 qualification for firefighters and NFPA 1021 qualifications for fire officers.

It is worth noting that the Minister's Order does not specifically provide that all firefighters must be NFPA 1001 qualified before serving on the fire ground. We believe that what it intends is that, before performing a particular task, the individual in question must have been trained to the appropriate NFPA standard for that task. It is then the responsibility of the incident commander to ensure that firefighters are tasked only with those functions (and situations) for which they have been trained.

Aggressive interior operations such as fire attacks and primary searches require firefighters to enter a hazardous environment, dramatically increasing the potential for adverse fire events such as flashover, smoke explosion or backdraft, along with exposure to a variety of other perils, thereby posing the most significant risk to firefighters in fire ground operations. A line of duty death or serious injury is a risk that all fire departments must seek to avoid. In the event of

a serious injury or line of duty death, the impact on the individuals involved, their families and the department can be severe and long lasting. There is also a significant potential for liability for the Department, its officers and the City.

The DCFRD has addressed the issue of firefighter training given that all members must meet the requirements of NFPA 1001 when they are hired, and has begun to address the need for fire officer development with the requirement to have NFPA 1021 as a minimum standard for their fire officers – Fire Officer I for those acting in the rank of captain and Fire Officer II for full promotion to the rank of captain[21]. This training should be supplemented by live fire training, an appropriate level of emergency incident management training and other opportunities to prepare these individuals for the role of incident commander as soon as possible.

This issue of appropriate training levels also needs to be considered in light of WorkSafe BC requirements and the obligation of employers to ensure that their workers are properly trained for their duties and supervised while performing them. An employer which fails to train and supervise its employees properly is in breach of the *Workers Compensation Act* (B.C.). The goal, therefore, should always be to maximize training for all firefighters, and to limit their fire ground operations to those tasks for which they have been properly trained.

To put it another way: firefighters should NEVER be permitted to exceed their training.

The DCFRD should be commended for establishing the NFPA 1021 Standard for Fire Officer I and Fire Officer II as the required standard not only to improve their abilities to adequately fulfil the roles of their fire officers but also to better meet the requirements of the Province. That being said, it is not realistic to immediately attempt to meet all of the requirements of the NFPA 1021 Standard for the existing officers as well as the new officer candidates. Rather, the goal should be to ensure that the existing fire officers have the components of training required to manage all emergency incident operations for which they will be responsible as soon as possible, and to develop a program for training up the “softer” functions – management skills and leadership skills – contemplated by the NFPA 1021 Fire Officer standards, over a reasonable period of time.

Where officers have not formally achieved any aspect of the emergency incident management qualifications applicable to their position, a training program needs to be developed to ensure that the identified gaps are bridged as quickly as reasonably possible. As for the new officer candidates, the program should be implemented immediately to ensure they will have met the requirements of Fire Officer I prior to acting as a captain and the requirements of Fire Officer II prior to promotion to the position of captain.

As with firefighters, fire officers MUST adhere to the limits of their actual training. As part of this process, the Department should review the actual NFPA training levels achieved by each of

[21] The job description for Captain also includes training of their crews, as examples of the work performed; specifically, “*Trains personnel by conducting lectures, classes and drills.*”

their officers and, if necessary, circumscribe their emergency incident operations to those training levels.

To achieve these appropriate levels of training for their firefighters and fire officers, the DCFRD will need to develop an adequate training ground with the appropriate facilities to ensure that these training requirements are not only achieved, but are maintained.

Recommendations

9. Recommendation #9: That the DCFRD, as soon as is reasonably possible, develop written operational guidelines that clearly specify the required proficiencies/competencies for recruits, probationary firefighters, firefighters and fire officers.

10. Recommendation #10: That the DCFRD, as soon as is reasonably possible, develop written operational guidelines dealing with all fire ground operations, including offensive interior operations. The written operational guidelines for interior operations, among other things, should specify the minimum levels of training and qualification for fire attack and primary search teams involved in such operations.

11. Recommendation #11: That the DCFRD, as soon as is reasonably possible, conduct a formal qualification review of its members regarding the various firefighter and fire officer roles and positions within the organization. Where members have not formally achieved any aspect of the emergency incident management qualifications applicable to their position, a training program must be implemented to ensure that the identified gaps are bridged as quickly as reasonably possible.

12. Recommendation #12: That the DCFRD, in conjunction with the City and possibly the PRRD departments in the area, as soon as is reasonably possible, develop an adequate training ground with the appropriate facilities to ensure that these training requirements be achieved and maintained on an ongoing basis.

Fire Prevention

The fire prevention branch is managed by a Captain and supervised by the Chief and Deputy Chief; some inspections are also performed by the duty fire crew. The inspections are managed using software developed by FirePro2, which is used by a number of fire departments in BC.

The DCFRD manages approximately 600 fire inspections annually, most of which are commercial properties. The Department, however, will conduct residential inspections on request. Until recently, the Department has been meeting the mandated interval between inspections. The time intervals have recently been amended, though, and it will take some time to determine if the new frequency of inspections is sustainable. The DCFRD does not bill for inspections, considering it to be part of basic service. It should be noted that some BC fire departments have chosen to begin charging for inspections on a cost-recovery basis, though in

many cases, this is limited to re-inspections where the initial inspection has identified a contravention.

The Department conducts its own investigations to determine fire cause and both the Captain and the Deputy Chief have been appropriately trained and certified. The subsequent requirement to report fire cause to the Officer of the Fire Commissioner is managed by submitting a PDF copy of the investigation report. The FirePro2 system has the ability to store photographs taken as part of the investigation and to link them with the investigation report.

Pre-planning of major risks in the fire protection area is critical to improving the effectiveness of emergency responses and increasing the safety of responding fire crews. The fire prevention branch takes the lead on the management of fire pre-plans. Until recently, these pre-plans have been text-based, but the Department is now going to develop them in a purpose-built software called FireCAD©. From this point forward, pre-plans will be built to the NFPA 1621 Standard, saved in a PDF format and linked to a server at the City Hall. In this format they could be copied to the mobile workstations which are recommended for the fire apparatus.

Although the FirePro2 software has the capability of managing hydrants, this option has yet to be implemented. One advantage of doing so would be to have more of the information the Department requires in a single software application which would allow each of the elements to be linked when providing a historical record of a property.

In general terms, the fire prevention branch appears to be working well and meeting its targets for inspections and investigations and will soon be enhancing the fire pre-plans used by the fire crews. It is noted that this branch is also beginning to review building plans as part of the overall review of development applications by the City. The fire prevention branch has also begun to work more with schools, and providing public fire education to students.

Recommendations would also be to implement all available modules in the FirePro2 software including hydrants and to ensure the pre-plans can be fully linked to the inspection and property records as well as being made available on mobile workstations when they are implemented. In addition, all members of the Department should be included in public education efforts. The Consultants also noted that a significant percentage of the DCFRD's responses are to alarms ringing where there is no emergency, and a particular recommendation in this regard is noted in the following section on "Total Responses".

With the additional workload being undertaken by the fire prevention branch, the Department will need to closely monitor overall work output in the areas of inspection, investigation and public education (core functions) to ensure they are not adversely affected. Additional staff or a redistribution of workload may be necessary in the future.

Recommendations

13. Recommendation #13: The DCFRD fire prevention branch should expedite implementation of the hydrant module in the current record management system (the "RMS").

14. Recommendation #14: The DCFRD should review its annual schedule and endeavour to increase education to the public and to businesses as a means to prevent fire injuries and damage and with a goal to reduce overall responses.

15. Recommendation #15: The DCFRD should continue to closely monitor fire prevention branch output of inspections, investigations and public education programs during the implementation of new programs.

Total Responses

The DCFRD tracks its responses in an RMS and data from this system was provided from 2006 to the present. This data was reviewed with the Fire Chief and used to provide analysis by year, month, day of the week and time of day. The data also allows for an analysis of the average response time to all incidents, as well as the types of incidents[22]attended and the relative percentage of each.

Figure 5 shows the total number of responses for the DCFRDD from 2006 to the end of 2010 and indicates a modest decline. The response by incident type that follows indicates that some types of responses are increasing during this time, while others are declining.

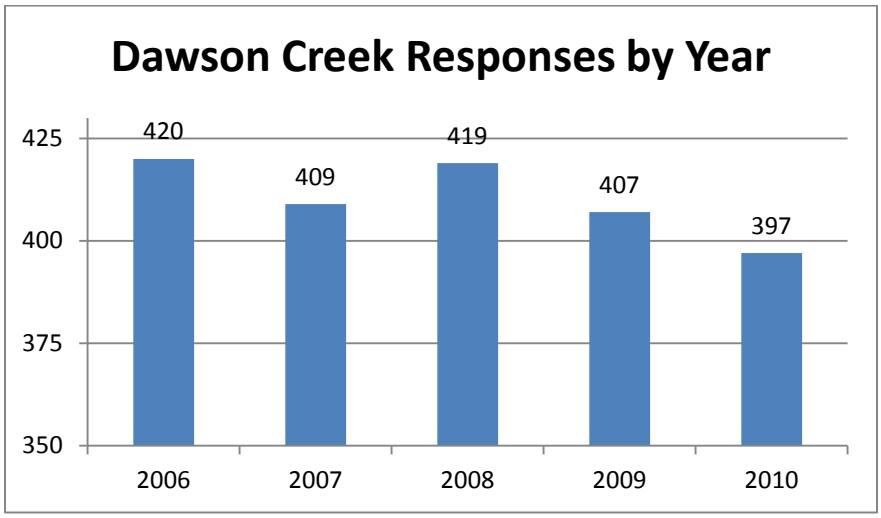

Figure 5: Total Responses by Year

The Department's responses, categorized by the 18 incident types by year, is summarized in Table 1 which shows the number of incidents of each type responded to every year, the total for the 5 year period, the percentage of the total for each response and a small trend line.

A number of the responses are declining over the 5 year period such as unclassified fires, vehicle fires, ambulance assists and structure fires. At the same time other incident types such as carbon monoxide alarms, fire standby and alarms ringing/false alarms are increasing.

[22] The DCFRD uses a total 18 incident types for all fire, medical, rescue, hazmat and other responses

Overall, the percentage of response to the various incident types is generally what is seen in smaller centres in the province. Of particular interest is the very small number of 'first responder' incidents which vary considerably from urban departments where this is often more than 50% of all responses, to departments such as DCFRD where the participation rate is very low.

	2006	2007	2008	2009	2010	Total	Percent	Trend
Alarms Ringing	74	89	97	111	92	463	22.8%	
Ambulance Assist	12	8	8	6	7	41	2.0%	
Carbon Monoxide	3	3	4	6	6	22	1.1%	
Chimney Fire	2	1	5	2		10	0.5%	
False Alarm (Criminal Intent)	10	12	7	5	7	41	2.0%	
False Alarm (Good Intent)	37	21	13	33	36	140	6.9%	
Fire Unclassified	28	31	44	17	19	139	6.8%	
First Responder	1		2	1	2	6	0.3%	
Grass	46	12	29	31	19	137	6.7%	
Hazardous Material	14	17	20	26	19	96	4.7%	
Investigation (no fire)	23	22	30	11	20	106	5.2%	
Motor Vehicle Incident	103	123	97	114	101	538	26.5%	
Mutual Aid			1			1	0.0%	
No Fire (standby only)	3	7	8	4	13	35	1.7%	
Public Service	4	3	1	2	3	13	0.6%	
Rescue & Safety	3	6	7	6	5	27	1.3%	
Rubbish	18	14	8	7	15	62	3.0%	
Structural Fire	22	21	16	8	14	81	4.0%	
Vehicle Fire	15	17	18	14	12	76	3.7%	

Table 3: Responses by Incident Type 2006 to 2010

This information is useful in that it provides a means to identify areas in which improvements could be made. One example is the grouping of alarms that are 'false' which includes alarms ringing as well as false alarm for both reasons shown. Together these equate to 644 incidents, or nearly 32% of all calls responded to by the DCFRD and it is recommended that one or more strategies be developed to reduce these.

16. Recommendation #16**:** The DCFRD investigate and implement strategies to reduce the number of false alarms to which it responds. These strategies may include a requirement by building owners and alarm monitoring companies to make better efforts to maintain alarm systems with a goal to reduce unnecessary responses. In some jurisdictions, the second or third false alarm results in a charge to the business or homeowner.

The Department's response data can also be analyzed to understand responses patterns by month, day of the week and time of day. Responses by month are shown in Table 4, and Figure 6 and these show a pattern found in most fire departments we have surveyed, with a higher number of responses in summer months, with the lowest numbers in January to March.

	2006	2007	2008	2009	2010
Jan	21	36	23	37	26
Feb	18	33	24	33	21
Mar	35	24	29	35	23
Apr	52	23	24	38	42
May	32	37	38	35	33
Jun	28	33	38	23	28
Jul	27	45	30	31	39
Aug	39	40	47	33	53
Sep	44	38	31	37	40
Oct	45	31	47	47	29
Nov	42	38	46	25	30
Dec	37	31	42	33	33

Table 4: Response Data by Month

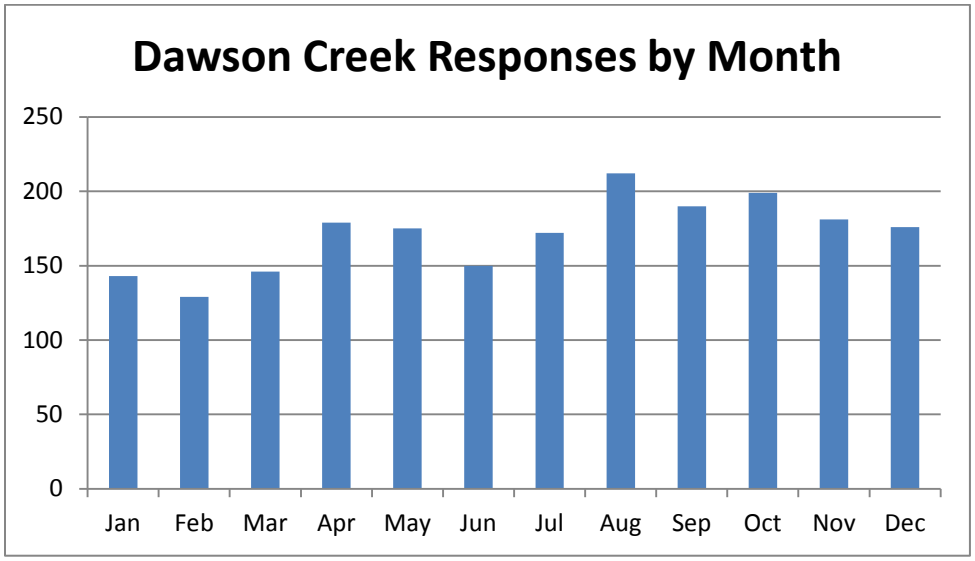

Figure 6: Responses by Month, 2006 to 2010

The response data can also be analyzed to determine the pattern of calls by day of the week and this is shown in Table 5 and Figure 7. The pattern, with Thursday[23] as the busiest day of the week is a bit anomalous in terms of fire departments we have surveyed in BC and elsewhere. In many departments, the busiest days of the week are Friday and Saturday.

In the case of the Department, Thursday is approximately 25% busier than Monday and Thursday and Friday have a much higher call volume than Sunday and Monday. This information is useful for a number of reasons as it suggests that intensive hose and ladder drills

[23] Note that the 10 year trend for the DCFRD shows Friday as the busiest day of the week

should be scheduled on Sunday or Monday if possible as they are much less likely to be interrupted by the requirement to cease the drill and respond to a call.

In a similar fashion, fire prevention and pre-planning inspections, especially if they are carried out away from the centre of the response area, are likely to be much more successfully completed on Sunday through Tuesday.

	2006	2007	2008	2009	2010
Sun	67	56	49	45	49
Mon	40	46	51	61	55
Tue	76	60	51	49	47
Wed	61	62	61	62	51
Thu	60	65	75	64	71
Fri	56	69	66	69	60
Sat	60	47	66	57	64

Table 5: Responses by Day of the Week

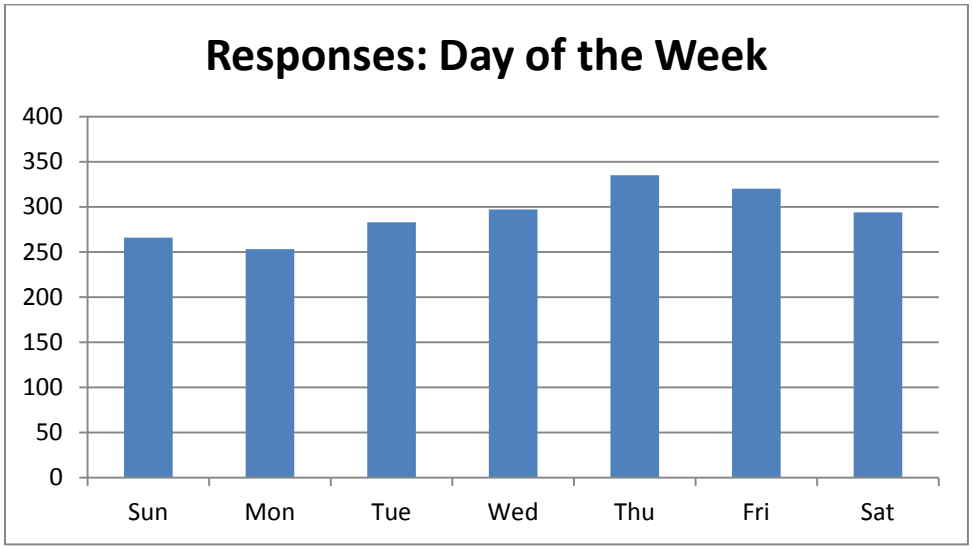

Figure 7: Responses by Day of the Week

Responses can also be analyzed by hour of the day and this is shown in Table 6 and Figure 8. This pattern is quite consistent with the large majority of fire departments with a peak volume beginning at noon and lasting until mid-evening.

Hour	Incidents
0100	67
0200	77
0300	56
0400	52
0500	42
0600	50

0700	62
0800	70
Hour	Incidents
0900	122
1000	118
1100	130
1200	217

1300	114
1400	168
1500	179
1600	160
Hour	Incidents
1700	169
1800	179

1900	174	2100	132	2300	102
2000	180	2200	132	2400	104

Table 6: Responses by Hour of the Day

The value of this information provides additional guidance in terms of scheduling activities in particular, training activities or perhaps vehicle maintenance which may delay responses given that the call volume at noon is 300% higher than at 0800 hours.

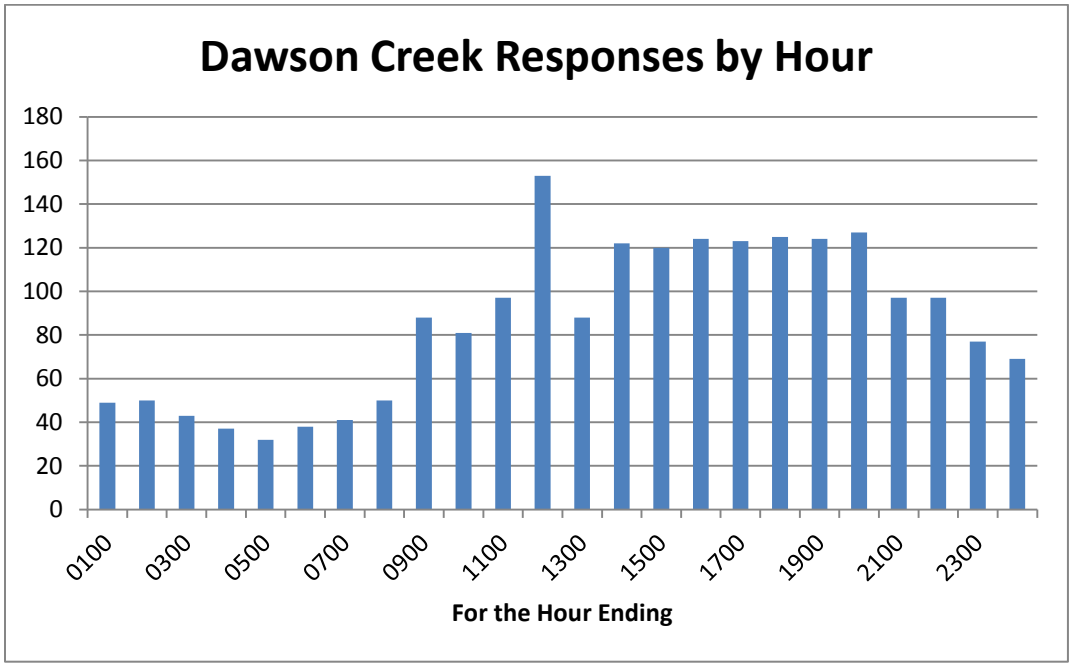

Figure 8: Response by Hour of the Day

Many fire departments have used the analysis of their responses to adjust scheduled activities. Based on this approach the DCFRD is most likely to succeed in completing a complex training activity, an inspection that requires the crew to leave the apparatus, or vehicle maintenance in the morning between 0800 and 1200 hours on Sunday, Monday or Tuesday and that where possible these types of activities are not so likely to succeed after the noon hour and on Thursday to Saturday. This is particularly important with a department such as DCFRD where the on duty staffing levels do not provide the ability to have multiple units able to respond.

Recommendations

17. Recommendation #17: The DCFRD consider planning its drill, inspection and maintenance activities, where possible, during periods of lower call volume to maximize the ability to complete these tasks without impacting emergency responses.

Dispatch & Communications

The DCFRD provides call taking and dispatch for itself as well as Arras, Pouce Coupe, Tumbler Ridge, Hudsons Hope, Tomslake, Moberly Lake, and Chetwynd. The dispatcher on duty

receives 911 calls from the RCMP PSAP in Prince George and receives any first medical responder calls from the BC Ambulance Service in Kamloops. DCFRD also has a direct line to receive miscellaneous emergency and non-emergency calls on a number of 10 digit phone lines.

Dawson Creek is dispatched by a member of the on-duty fire crew on nights and weekends and during the day time by a clerk dispatcher[24]. Having a non-firefighter available for dispatch during the weekdays has meant that one additional firefighter has been able to respond immediately with a first-out truck.

The dispatch office is located on the main floor of the fire hall in an area between the front door, and the entrance to the apparatus floor. The layout of the dispatch office is shown in Figure 9. Facing toward the map, the paging and radio equipment is shown on the left side of the room, the telephones, voice logger and other computer equipment are shown to the right.

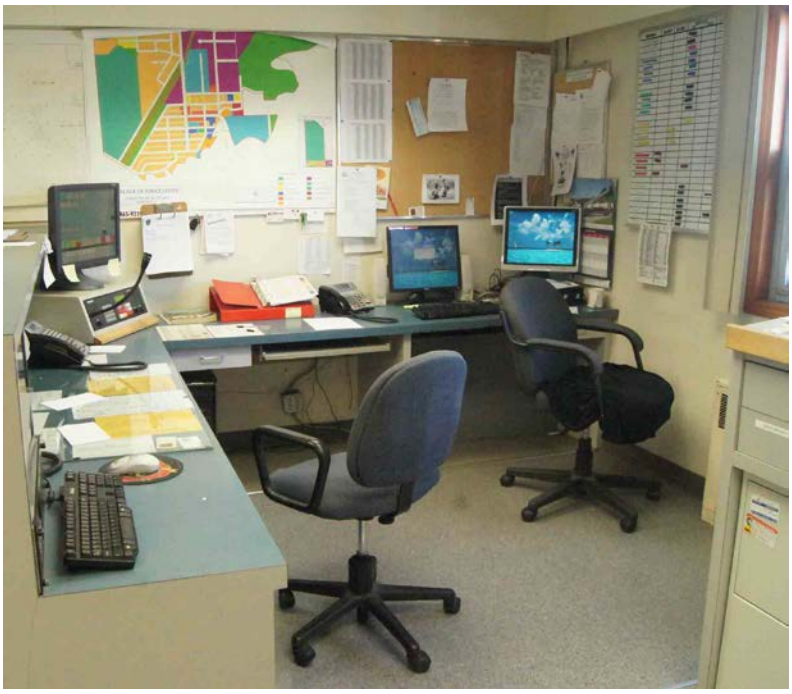

Figure 9: Dawson Creek Fire Dispatch

In a previous section of this report, a reference was made to the NFPA 1221 standard which provides the basis for call taking and dispatch metrics. The standard also outlines many other issues including security, power management, redundancy, training and supervision of personnel. In our review of the dispatch office, we identified a number of concerns including security, power management and disaster recovery.

[24] The position of clerk-dispatcher was implemented in 2011

Dealing first with physical security, there is a requirement for such facilities to be much more secure than is the case in Dawson Creek. The standard notes in this regard that:

> ***4.6.1*** *The communications center and other buildings that house essential operating equipment shall be protected against damage from vandalism, terrorism, and civil disturbances.*
>
> ***4.6.2*** *Entry to the communications center shall be restricted to authorized persons.*
>
> ***4.6.3*** *Entryways to the communications center that lead directly from the exterior shall be protected by a security vestibule.*
>
> ***4.6.3.1*** *Door openings shall be protected by listed, self-closing fire doors that have a fire resistance rating of not less than 1 hour*.[25]

The following figures illustrate the absence of any substantial physical security for the dispatch office. Although the likelihood of any threat to the dispatcher and equipment is low, the consequences are potentially severe if such a situation arises and physical security should therefore be addressed.

Figure 10: Dispatch Entrance

[25] NFPA 1221—2010, page 10

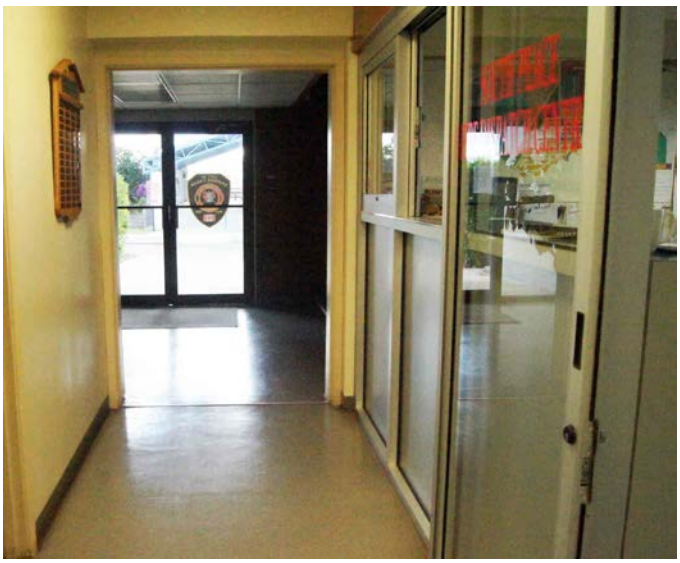

Figure 11: Dispatch Facing to Front Door of the Fire Hall

There are a number of options the DCFRD could consider, including 'hardening' the existing room by providing a better degree of physical separation and protection for the personnel and equipment. Another option would be to relocate the dispatch facility to another area of the fire hall that could be made more secure.

Recommendations

18. Recommendation #18: The DCFRD review the security of the fire dispatch facility and take steps to increase the physical separation and protection from attack, vandalism or any other threat.

The next issue that arises is the need to clarify the relationship between the DCFRD as a dispatch provider and the PRRD, including the way in which business continuity for these critical services would be maintained. As noted, the DCFRD provides call taking and dispatch for a number of fire departments while Fort St John provides a similar service for the rest of the fire departments in the regional district. The 911 service itself is provided by the RCMP at Prince George which is in the Regional District of Fraser-Fort George.

When the DCFRD was asked about the 911 printer and the radio and paging there was a lack of clarity as to whether the Department owned and maintained this equipment or whether it was all the property and responsibility of the PRRD. This question becomes important when key systems fail or if the Department's fire dispatch centre is rendered unusable. In our discussions with the Department and City, it became clear that the necessary business continuity planning and processes had not been conducted or established.

There was a general assumption that 911 calls could be re-routed to Fort St John, though there were no written procedures to this effect. Even if the calls were re-routed, however, it does not appear that Ft. St. John dispatch has the ability to access the radio and paging systems of the DCFRD dispatch clients. In a similar way there is no clear understanding how the Department

would provide dispatch for Fort St John and its dispatch clients, should the dispatch office at the Fort St John fire hall fail or lose connectivity.

NFPA 1221 provides guidance on the general approach to be taken.

> ***4.1.3*** *The communications center shall be provided with an alternate means of communication that is compatible with the alternate means of communication provided at the emergency response facilities (ERFs).*
>
> ***4.1.3.1*** *The alternate means shall be readily available to the telecommunicator[26] in the event of failure of the primary communications system.*
>
> ***4.1.4**** *Each jurisdiction shall maintain an alternate communications center that meets the criteria in 4.1.4.1 and 4.1.4.2.*
>
> ***4.1.4.1*** *The alternate communications center shall be capable, when staffed, of performing the emergency functions performed at the primary communications center.*
>
> ***4.1.4.2**** *The alternate communications center shall be separated geographically from the primary communications center at a distance that ensures the survivability of the alternate center.*
>
> ***4.1.4.3*** *Each jurisdiction shall develop a formal plan to maintain and operate the alternate communications center.*
>
> ***4.1.4.3.1*** *The plan shall include the ability to reroute incoming alarm traffic to the alternate center and to process and dispatch alarms at that center.*
>
> ***4.1.4.3.2**** *The plan shall be included in the Comprehensive Emergency Management Plan (CEMP).*
>
> ***4.1.5**** *The communications center shall be capable of continuous operation long enough to enable the transfer of operations to the alternate communications center in the event of fire or other emergency in the communications center or in the building that houses the communications center*.[27]

The important issues for Dawson Creek and the PRRD to consider are the establishment of an alternate site to provide fire call taking and dispatch. This site would need to have compatible equipment, access to the radio and paging network, and a working understanding of the appropriate operational guidelines. Once established, this backup system should be regularly tested. It may be that the Department and Fort St. John could provide mutual back-up to each other's dispatching operations; this issue, however, should be formalized in an agreement and covered by appropriate operational guidelines and testing.

[26] Telecommunicator is the NFPA term for a fire dispatcher

[27] NFPA 1221—2010, page 9

Recommendations

19. Recommendation #19: That the Dawson Creek Fire Department develop a complete business continuity model for 911 calls as well as fire call taking and dispatch for itself and its dispatch clients. This would include a fail-over plan to another centre that could provide service. The procedures for such a fail-over to another location need to be documented and regularly tested.

A final issue within this general section is the issue of standby electrical power for all necessary lights and equipment. The DCFRD has a natural gas generator to provide power for emergency systems as shown in Figure 12. The generator is fed by the same natural gas connection that the fire halls operates on and must be started manually.

This generator then supplies power to an emergency (EM) panel in the electrical room, but the transfer switch shown in Figure 13 must be manually activated for the power to flow to the dispatch office and other parts of the fire hall. Although this generator is tested regularly, the need for manual intervention is less than ideal.

Where possible, the failover of an electrical system supporting dispatch office should be automated, as the dispatcher may be the only person in the fire hall during a disaster as the fire crews would be otherwise deployed. In such a case the dispatcher would need to leave his or her post in the control centre to manually start the generator and then to manually transfer power once the generator had started.

Figure 12: Standby Generator

Figure 13: Transfer Switch

Recommendations

1. Recommendation #20: The DCFRD should review the provision of alternate electrical power for essential communications equipment and, if possible, have the fail-over occur automatically once the primary power is lost. In the interim, the dispatcher and all staff at the DCFRD should be made familiar with the procedure to start the standby generator and to transfer power to the EM panel.

Radio coverage including paging capability throughout the City and the fire protection area was discussed and generally it is described as satisfactory. Staff noted that there are some dead spots in terms of coverage, but that these are not tracked. At some point, the radio system will be upgraded or replaced either to support further narrow-banding or to implement a larger number of tactical and operational channels as well to support greater interoperability. Identification of the areas without coverage using current transmitters/repeaters will be useful in determining the requirements for any future system.

Recommendations

2. Recommendation #21: The DCFRD should begin tracking areas within the City and the fire protection district where radio and paging coverage is poor or non-existent.

The radios used by the DCFRD were reviewed and are considered appropriate for the fire service. It was noted that batteries are charged in banked-chargers with at least one spare battery for each in-service portable.

Figure 14: DCFRD Portable Radio

The Department, however, does not provide for regular battery conditioning which is a process whereby the batteries are discharged properly, then re-charged using a system to ensure a correct charge rate, and to measure the degree to which the battery can be sufficiently charged with appropriate capacity. Regular use of battery conditioners is strongly recommended for two reasons: first, the conditioned batteries will last longer at a sustained emergency; and second, conditioning will increase the useful lifespan of the batteries resulting in longer term savings.

Recommendations

3. Recommendation #22: The DCFRD should consider implementation of a battery conditioning program to ensure the highest possible charge and capacity for portable radio batteries and to maximize their useful lifespan.

The location of fire hydrants was discussed with the Fire Chief during a thorough review of the City and the fire protection area. In some locations, knowledge of the location of fire hydrants will be critically important when making initial attack decisions and this information should be immediately available to fire crews.

The City has a very well mapped water distribution system, including the location of hydrants and it is recommended that mobile workstations be installed in fire apparatus to ensure this information is available at all times to fire officers and crews. The installation of mobile workstations is now becoming a standard feature for fire apparatus in BC and these computers can contain information with regard to the road network, building pre-plans, hydrants, storage of dangerous goods, inspection information, operational guidelines, and similar data essential for effective emergency operations. An example of a mobile workstation is shown in Figure 15.

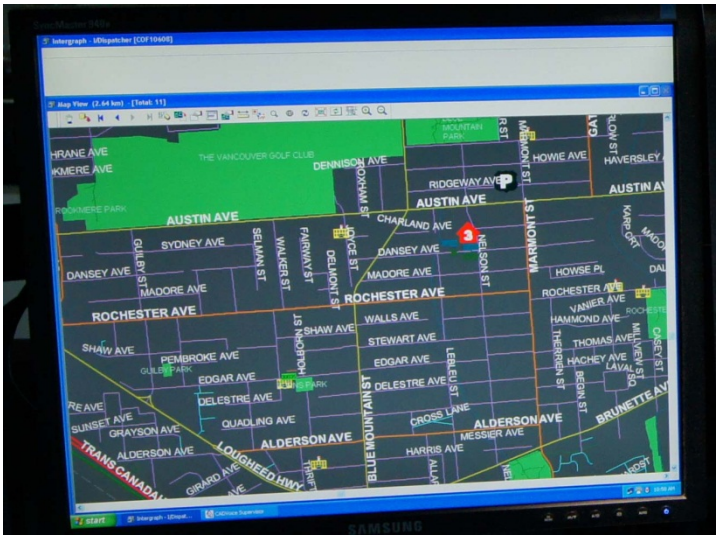

Figure 15: Fire Unit Mobile Workstation

Recommendations

4. Recommendation #23: The DCFRD should consider the implementation of mobile workstations in fire apparatus to store data related to the road network, hydrants, pre-plans, inspections, hazardous materials, operational guidelines and any other required information.

Fire Hall

Fire Hall Location

The location of the DCFRD fire hall was reviewed for 'centrality' related to its response district and this is shown in detail in Figure 16[28]. The boundaries for the City of Dawson Creek are shown in red.

The fire hall at its current location is well located at or near the centre of its response boundaries and with drive times to the limits of its immediate response area that are acceptable. There is little if any justification for a second fire hall within the current boundaries.

[28] Note that the map views used in this section were produced using a licenced copy Google Earth Pro© , the boundaries were taken from maps supplied by the City of Dawson Creek and the Peace River Regional District and the locations of the structure fires were taken from the DCFRD record management system.

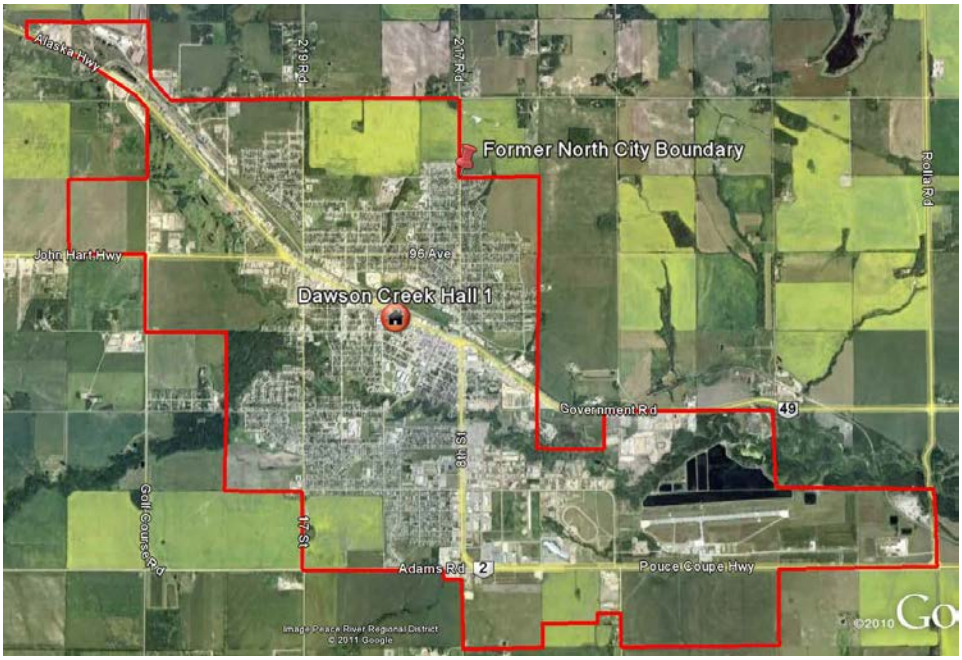

Figure 16: Dawson Creek City Fire Protection Area

The boundary of the additional fire protection area is shown in Figure 17.

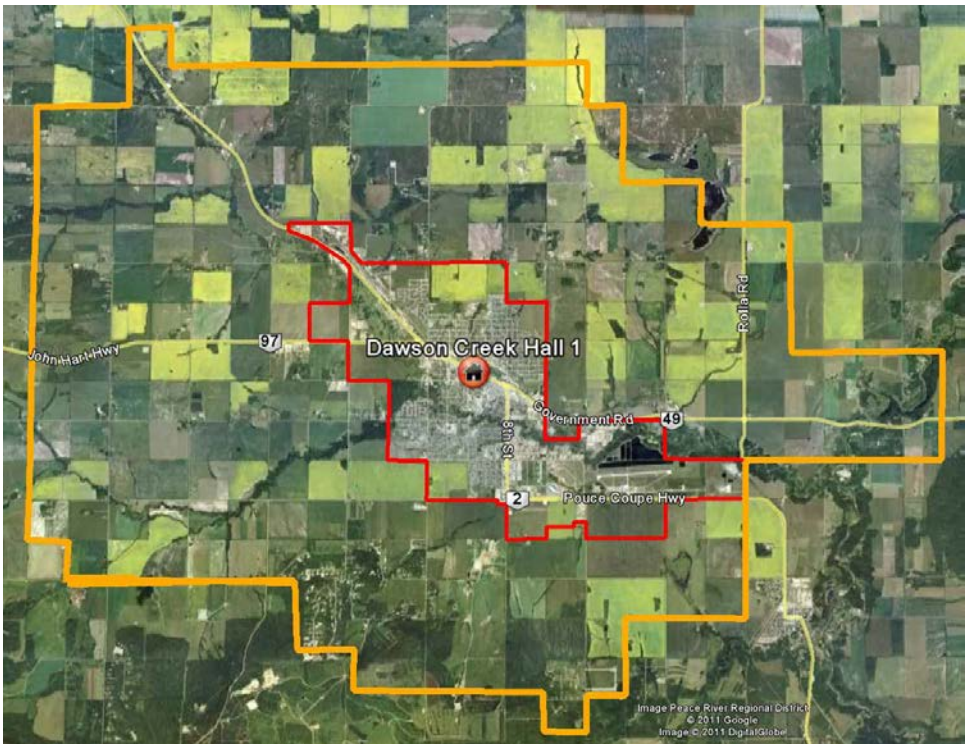

Figure 17: Dawson Creek Extended Fire Protection Area

The locations of structure fires responded to by the DCFRD are shown in Figure 18. The locations for these fires were obtained from the Department's RMS and demonstrate that the fire hall is appropriately located. The data provided was for the years 2006 through 2010, during which period the Department recorded 81 structure fires.

Figure 18: Dawson Creek Structure Fires 2006 to 2010

Fire Hall Condition

The fire hall is a 5-bay structure as shown in Figure 19. The hall was built approximately 50 years ago and provides space for fire apparatus, staff, offices, training rooms, a reception area, a workshop for small equipment repairs and a dispatch facility.

The fire hall was built to the prevailing code but would most likely not meet current seismic standards. As noted above, the fire hall is well located in terms of its current responses; however it lacks any appropriate facilities for hose and ladder drills beyond the use of the front apron of the fire hall and a hydrant.

Figure 19: Dawson Creek Fire Hall

The DCFRD makes the best possible use of the current fire hall however there is no space for expansion or for any additional apparatus that may be procured. The issue of space for training has been discussed in other reports including the FUS, and this is a primary requirement for the Department.

For training purposes, the Department needs a dedicated space where crews can flow the required amount of water for all types of drilling and testing. In this regard, it is recommended that an enhanced training area include a sump to allow for water to be re-used as well as to avoid unnecessary runoff. The training area will also require some type of an engineered tower for firefighting and rescue training as well as a live burn facility. In addition to the lack of a suitable area for exterior training, the fire hall lacks a suitable classroom with the required facilities to conduct interior classroom sessions for a reasonable number of members. The specific recommendations with regard to training are contained in another section of this report.

The fire hall should also be surveyed and upgraded as required to ensure it is brought into compliance with the current standards for seismic events, as well as its primary electrical power and standby generator.

Fire Underwriter's Study

The Fire Underwriters conducted a review of the DCFRD in 2010 and provided a series of recommendations. These were reviewed with the Fire Chief, and the following update is provided. The first bullet contains the FUS recommendation followed by the comments from the Fire Chief and the Consultants.

- FUS Recommendation 8.2-1: Provide Additional Apparatus (Engine)

- It is noted that this would provide a number of advantages including having better spare capability if the existing apparatus requires repairs. The fire hall, however, does not have sufficient space for additional apparatus, although if a training site at the airport is developed, a third engine could be stored there and used for practice as well as for call-back staffing.

- FUS Recommendation 8.2-2: Provide a Reserve Ladder
  - It is agreed that this would provide additional backup but that at this time given the call volume and the limited number of higher buildings, this is not as high a priority as acquisition of a third engine.

- FUS Recommendation 8.2-3: Improve Apparatus Pumping Capacity
  - It is agreed that as engines and ladders are replaced that they should be specified with higher pumping capacities.

- FUS Recommendation 8.2-4: Train and Qualify Additional Fire Fighters to Officer Positions
  - It is noted as well that the DCFRD has recently agreed that the NFPA 1021 Standard for officers will now be a requirement to be a Captain in the Department. As firefighters enhance their skills with NFPA 1021 this should address this particular issue. In addition, it is proposed that emergency scene management be provided to all officers and officers under development to ensure the highest level of competence in this regard.
  - One additional item that relates to the competence of fire officers is the lack of a drill and training area with the various props and other training aids. This will be addressed in the training section below.

- FUS Recommendation 8.2-5: Improve Total Available Fire Force
  - Among the recommendations are to add one or more ‘floaters’ to balance staffing to cover short term illnesses, training and other requirements that cause minimum staffing to fall below recommended levels. This should also ensure a somewhat higher number of firefighters to respond, more of the time.
  - Another way to enhance the total fire force is to make greater use of the volunteers on a 7x24 basis. At the present time they may not be called as often as may be required and using them more frequently and documenting this capability will address part of the total fire force issue.

- FUS Recommendation 8.2-6: Improve In Service Apparatus Company Staffing
  - It is noted that this only credits on duty staffing and does not credit volunteers.
  - The Department received 72 points out of a possible 240 for this section and without a significant increase in career staffing it will be difficult to achieve a higher score for this section.
  - Having a longer term plan to have at least one engine company capable of responding with a complement of four members should be established.

- FUS Recommendation 8.2-7: Improve Training Program for Officers
    - See the comments re 8.2-4 above.

- FUS Recommendation 8.2-8: Acquire Training Facilities
    - It is agreed that the existing training site at Hall 1 does not have the ability to sufficiently train firefighters and officers and that, if possible, an alternate site should be considered.
    - In this regard there is space available at the west end of the airport which is used for some training at the present time, and it is recommended that this property be upgraded with a hard surface, a drafting pit, a training tower, a burn facility and other props suitable to train DCFRD firefighters and officers.

- FUS Recommendation 8.2-9: Develop and Implement Running Card System
    - It is noted that a running card system defines what may be described as standards of cover or the amount of apparatus and firefighters that should be dispatched based on the incident type. The Department is developing these and implementing them and this will require further review to ensure consistency.

- FUS Recommendation 8.2-10: Develop and Implement Pre-Incident Planning System
    - This process is being implemented and the required software has been purchased and personnel have been trained to use it.
    - This will be augmented by the implementation of mobile workstations as recommended elsewhere in this report.

- FUS Recommendation 9.2-1: Improve Reliability of Pumping Capacity
    - This matter is being addressed by the City of Dawson Creek

- FUS Recommendation 9.2-2: Improve Reliability of Power Supply
    - It is noted that this is the power backup for the water supply system and is to be addressed by the City of Dawson Creek.

- FUS Recommendation 9.2-3: Improve Reliability of Principal Mains
    - This matter is being addressed by the City of Dawson Creek.

- FUS Recommendation 9.2-4: Upgrade Water Main Sizes
    - This matter is being addressed by the City of Dawson Creek.

- FUS Recommendation 9.2-5: Improve Hydrant Distribution
    - This matter is being addressed by the City of Dawson Creek.

- FUS Recommendation 9.2-6: Classify Hydrants According to NFPA 291
    - This matter is being addressed by the City of Dawson Creek.
    - When this classification is completed this information will be added to the pre-plans

- FUS Recommendation 10.1-1: Develop and Implement Public Education Programs

  - It is agreed that this is a priority for the DCFRD and is also discussed in the section of this report dealing with fire prevention.

- FUS Recommendation 10.1-2: Individuals Conducting Fire Prevention Inspections Should be Certified Fire Inspectors
  - The DCFRD's fire prevention officer is now fully qualified.

- FUS Recommendation 10.1-3: Implement Sprinkler Bylaw
  - It is noted that this is a work in progress; the DCFRD is working with City staff to implement this.

- FUS Recommendation 11.2-1: Design of Fire Service Communication Centres
  - There is a larger discussion of this entire matter at another section of this report.
  - It is noted that the Department has now implemented a full time dispatcher and that run cards are being implemented.

- FUS Recommendation 11.2-2: Testing of Communication Equipment
  - It is noted that testing of the primary and secondary call paths are regularly done by the dispatchers.

- FUS Recommendation 11.2-3: Individuals Handling the Receipt and Dispatch of Emergency Calls Should Have an Equivalent or Certified Level of Training in Accordance with NFPA 1061.
  - It is agreed that a training and certification program for the dispatcher will be required.

Official Community Plan

The Official Community Plan (the "OCP") was reviewed and provides a good deal of information with regard to the future building strategy for the City. Although it is generally silent on matters related to the fire department *per se*, it does have two specific policies in this regard.

- *Policy 3.13.4: Maintain the existing level of service for fire protection and upgrade facilities as required*
- *Policy 5.2.3: The City recognizes that rooming house/hotel accommodation is an important low cost housing option for the workforce. The City will continue inspections of hotel facilities to ensure they meet fire safety standards*.[29]

These issues were discussed with staff. Suffice to say that the DCFRD is fully aware of the issues regarding rooming houses and hotels, and has an inspection plan to address the requirements of Policy 5.2.3.

[29] City of Dawson Creek, Official Community Plan.

Review with Staff

The on-duty and off-duty personnel from the DCFRD met with the Consultants on a number of occasions during the site visit, as well as participating in a facilitated SWOT analysis. This was intended to provide additional context for the study and was very open, candid and positive.

SWOT Analysis

Internal Strengths

The following items were identified as being the primary internal strengths of the Department.

- Members of the Department work quite well together, there is a strong sense of camaraderie and they respond effectively to all calls for service;
- Members of the department have a broad range of knowledge with regard to the fire service, and to other issues. This comes in part from their previous work experience;
- There is a diversity in the ages of the members; many with considerable years of service;
- The DCFRD is innovative and open to learning;
- Members of the Department feel that that they work with good equipment including the fire apparatus and their personnel protective equipment; and
- Addition of the dispatcher Monday to Friday now allows the on-duty crew to train together more consistently.

Internal Weaknesses/Challenges

The review of internal weaknesses or challenges focused on a number of areas including day-to-day operations, training and equipment. The workshop participants identified a number of issues as having a higher priority and in the following list they are shown in bold.

- Lack of Consistency
    - There was broad agreement that as an organization the members had always done things a certain way and that at times there was some reluctance to change;
    - One example that was provided related to the use of Run Cards for response of apparatus and call back instructions and it was agreed these should be consistently applied;
    - There is inconsistency at times in terms of expectations between the 4 shifts;
    - Internal communications is improving but there is still room for more consistency; and
    - Another example is training which is not always delivered consistently.
- Staffing for structure fires and larger, longer term incidents
    - **It was identified that a goal for the department was to achieve a minimum crew size of 4**, including the officer and firefighters;

- There is a shortage of pre-plans[30] and the need for these increases given the number of buildings added, or in the process of development;
- The **radio system has one or more dead spots** with the result that in some locations there is little or no ability to receive pages or to communicate with dispatch;
- The **training site lacks the ability to conduct live fire training**; also during a number of months of the year the Department cannot drill effectively due to very cold weather:
    - There are difficulties getting the whole department together for a major training exercise—some of which is contractual; the result is that it is very difficult to conduct scenario based training.
- The DCFRD is **unable to deliver Hazmat at a Technical Level**; when this is required they can request Fort St John if they are available. There are 2 members trained as hazmat technicians; these two will be retiring in the near future;
- There is a **need for training in emergency scene management at all levels** to confirm that there can be only one incident commander; at times, too many people are giving orders;
- Fire prevention is improving with a permanent fire prevention officer. Some ongoing challenges include enforcement of orders and **the need for consistency between the shifts for on-duty inspections;**
- There is a perception that the public is not fully aware of the value the Department provides. There is a Facebook page for the DCFRD that is new and still being assessed; also the web site could be augmented with more information;
- There is a desire to further utilize the health & wellness program;
- The **current fire hall is probably not seismically compliant to the current code and there is little or no space for expansion or other uses**:
    - Note there is another hall at the airport that is not currently used for the fire service; also although they respond to the airport, only one member of the Department is crash rescue trained; and
    - There is a lack of clarity with regard to the airport crash truck stored at Hall 1.
- The fire hall is not protected with a full UPS and the generator requires a manual intervention.

External Opportunities

The focus of the workshop with regard to external opportunities was to provide additional services as well as to interact to a higher degree with the public.

- Provide **more public education**, both in terms of education but also awareness of what the DCFRD does;
- Continue volunteering more time in the community. It was noted that the members have added the SPCA as a charity or service that they support;

[30] It is noted that the DCFRD has implemented standard fire service software and has now begun developing pre-plans.

- **Familiarization of buildings over and above the pre-planning and inspections** – more tactical inspections;
- Improve hazmat capability to a technical level; and
- Increase first medical responder service to the public. It was noted that the Department is trained but doesn't respond beyond the agreed Resource Allocation Plan.

External Threats/Challenges

The discussion about external threats or challenges was mainly focused on ways in which Dawson Creek might change that would reduce the ability of the DCFRD to provide a service. These included:

- Possible loss of the 'Fair Share' program, noting that it is up for reconsideration by 2020;
- Any reduction in the budget or loss of support from Council or the public;
- **Expansion of the industrial and residential areas that is at a greater rate than the fire department's ability to provide service**; the most current example being the development of the nitrogen plants; also the development of more commercial and industrial properties;
- **Transportation of dangerous materials through the area** without the ability to provide a Hazmat Technical response;
- Any further expansion of the fire protection response area without additional resources;
- Some areas have asked for inclusion in the fire protection area but this has been declined by the City for now due to response times; and
- Maximum height is currently 4 floors, but this is not in the bylaw; expect **buildings may go to 6 stories or greater.**

Summary and Feedback

At the conclusion of the SWOT analysis the members taking part provided the following feedback on the process to date:

- Inclusion of the members of the Department in the discussion and review is appreciated:
    - This was a good healthy discussion – good to talk to and listen to others from outside the department and to share concerns and develop solutions;
    - There is value in brainstorming – nice to know you're not alone with various issues; and
    - It is also good to be moving in a positive direction.
- There is a curiosity as to where the department will go from this point and what the future holds for them;
- There is an interest in hearing what the Chief wants for the future, what council desires and will support;
- The discussions worked well to have time with the Chief taking part in discussions and then time without the Chief's presence;
- There was agreement that 'it's easy to complain', and sometimes tougher to lead.

- The membership is looking forward to the outcome of the report and subsequent changes.

5. Budget Review

The cost of fire services was reviewed for Dawson Creek using the data provided by Civic Info BC[31]. It should be noted that the database information does not separate out fire department costs from police and whatever may be covered by the rubric of 'protective services'. That said, the largest portion of protective services is for fire and police and for all of the jurisdictions in the following table. With the exception of Esquimalt, Oak Bay and Central Saanich, the police department is the RCMP. The three exceptions retain a local police department. The data set is for cities with a population between 10,000 and 25,000.

The data in table 7 illustrates the per capita cost of protective services and based on this information Dawson Creek has the second highest cost followed by Fort St John. Further interpretation of this data may present some risks, but it is probably relevant that adjoining jurisdictions such as Dawson Creek and Fort St John have similar per capita costs.

Name	Jurisdiction type	Population	Per Capita	Protective Services
Esquimalt	Township	16,840	$ 596	$ 10,043,104
Dawson Creek	City	10,994	$ 562	$ 6,181,863
Fort St. John	City	17,402	$ 548	$ 9,542,608
Prince Rupert	City	12,815	$ 548	$ 7,017,605
Langley	City	23,606	$ 484	$ 11,414,341
Port Alberni	City	17,548	$ 450	$ 7,896,925
White Rock	City	18,755	$ 447	$ 8,381,378
Williams Lake	City	10,744	$ 416	$ 4,465,907
Oak Bay	District	17,908	$ 408	$ 7,304,056
Squamish	District	14,949	$ 386	$ 5,765,187
Terrace	City	11,320	$ 385	$ 4,362,772
Cranbrook	City	18,267	$ 360	$ 6,577,353
Powell River	City	12,957	$ 355	$ 4,603,468
Central Saanich	District	15,745	$ 355	$ 5,591,203
Langford	City	22,459	$ 325	$ 7,304,304
Pitt Meadows	City	15,623	$ 309	$ 4,822,396
Sidney	Town	11,315	$ 288	$ 3,259,094
Courtenay	City	21,940	$ 282	$ 6,197,395
Colwood	City	14,687	$ 280	$ 4,116,549

[31] www.civicinfo.bc.ca

Name	Jurisdiction type	Population	Per Capita	Protective Services
Salmon Arm	City	16,012	$ 274	$ 4,390,940
Parksville	City	10,993	$ 246	$ 2,705,160
North Saanich	District	10,823	$ 240	$ 2,598,535
Comox	Town	12,136	$ 178	$ 2,163,454
Summerland	District	10,828	$ 178	$ 1,924,410
Mount Waddington	Regional District	10,063	N/A	N/A
Powell River	Regional District	18,900	N/A	N/A
Skeena-Queen Charlotte	Regional District	16,818	N/A	N/A

Table 7: Cost for Protective Services

The next table derived from Civic Info, illustrates the same group of cities, but illustrates the residential tax rate. When the data is presented this way, Dawson Creek and Fort St John are very similar but are lower than cities such as Williams Lake, Cranbrook, Terrace, Port Alberni and Prince Rupert. The reasons for this probably relate to the allocation of residential tax rates relative to industrial tax rates, assessment values and similar matters.

Name	Jurisdiction type	Population	Residential
Prince Rupert	City	12,815	$ 9.1410
Port Alberni	City	17,548	$ 7.4227
Terrace	City	11,320	$ 6.5610
Cranbrook	City	18,267	$ 6.0214
Williams Lake	City	10,744	$ 5.2603
Dawson Creek	City	10,994	$ 5.1600
Fort St. John	City	17,402	$ 5.0885
Esquimalt	Township	16,840	$ 4.5314
Powell River	City	12,957	$ 4.2780
Salmon Arm	City	16,012	$ 4.2585
Parksville	City	10,993	$ 3.9128
Squamish	District	14,949	$ 3.7586
Langley	City	23,606	$ 3.6970
White Rock	City	18,755	$ 3.6922
Courtenay	City	21,940	$ 3.6621
Pitt Meadows	City	15,623	$ 3.5814
Comox	Town	12,136	$ 3.0801
Oak Bay	District	17,908	$ 2.9257
Central Saanich	District	15,745	$ 2.8786
Summerland	District	10,828	$ 2.8499
Sidney	Town	11,315	$ 2.7630
Colwood	City	14,687	$ 2.7527
Langford	City	22,459	$ 2.2389

Name	Jurisdiction type	Population	Residential
North Saanich	District	10,823	$ 1.6741
Mount Waddington	Regional District	10,063	N/A
Powell River	Regional District	18,900	N/A
Skeena-Queen Charlotte	Regional District	16,818	N/A

Table 8: Residential Tax Rate

6. Summary of Recommendations

The following are the major recommendations, as found within the report.

Recommendation #1: That the existing Operational Bylaw be reviewed and updated, to ensure that all of the Department's existing activities are properly authorized, and to streamline certain reporting lines.

Recommendation #2: That the City enter into an agreement with the PRRD which would permit the Department, at the Department's sole discretion, to operate in the unprotected PRRD territory outside of the existing fire protection boundaries. This arrangement would enable the Department to respond to (for example) wildland-urban interface situations or other events which potentially threaten its fire protection area.

Recommendation #3: The mutual aid agreement must be formally re-instated. We would recommend that the Department and the City review the issues described in the above section when re-negotiating the agreement with the PRRD. The City also should review the terms of the Mutual Aid Agreement with its counsel.

Recommendation #4: The City should review the terms under which it provides fire protection services to the Specified Area. The existing agreement should be reviewed with counsel and revised as appropriate to more clearly define and limit the obligation to provide services.

Recommendation #5: The DCFRD consider it a high priority to provide fire officer training for all firefighters who will be promoted as Captain or acting in the rank of Captain within the next 3-5 years. This training is to meet the requirements of the NFPA 1021 Standard for Fire Officer Professional Qualifications, 2009 Edition (including live fire and emergency incident management training) as a minimum.

Recommendation #6: That the DCFRD increase the number of in-service engines from 2, to 3 and that engine units be replaced on a 20-year cycle.

Recommendation #7: That the DCFRD replace the current rescue unit with a larger, better equipped unit for highway rescue that could also provide support at fire and other emergencies as an equipment truck.

Recommendation #8: That the DCFRD develop a forward budgeting process to accrue funds for the regular replacement of all first-line fire response units.

Recommendation #9: That the DCFRD, as soon as is reasonably possible, develop written operational guidelines that clearly specify the required proficiencies/competencies for recruits, probationary firefighters, firefighters and fire officers.

Recommendation #10: That the DCFRD, as soon as is reasonably possible, develop written operational guidelines dealing with all fire ground operations, including offensive interior

operations. The written operational guidelines for interior operations, among other things, should specify the minimum levels of training and qualification for fire attack and primary search teams involved in such operations.

Recommendation #11: That the DCFRD, as soon as is reasonably possible, conduct a formal qualification review of its members regarding the various firefighter and fire officer roles and positions within the organization. Where members have not formally achieved any aspect of the emergency incident management qualifications applicable to their position, a training program must be implemented to ensure that the identified gaps are bridged as quickly as reasonably possible.

Recommendation #12: That the DCFRD, in conjunction with the City and possibly the PRRD departments in the area, as soon as is reasonably possible, develop an adequate training ground with the appropriate facilities to ensure that these training requirements be achieved and maintained on an ongoing basis.

Recommendation #13: The DCFRD fire prevention branch should expedite implementation of the hydrant module in the current record management system (the "RMS").

Recommendation #14: The DCFRD should review its annual schedule and endeavour to increase education to the public and to businesses as a means to prevent fire injuries and damage and with a goal to reduce overall responses.

Recommendation #15: The DCFRD should continue to closely monitor fire prevention branch output of inspections, investigations and public education programs during the implementation of new programs.

Recommendation #16: The DCFRD investigate and implement strategies to reduce the number of false alarms to which it responds. These strategies may include a requirement by building owners and alarm monitoring companies to make better efforts to maintain alarm systems with a goal to reduce unnecessary responses. In some jurisdictions, the second or third false alarm results in a charge to the business or homeowner.

Recommendation #17: The DCFRD consider planning its drill, inspection and maintenance activities where possible during periods of lower call volume to maximize the ability to complete these tasks without impacting emergency responses.

Recommendation #18: The DCFRD review the security of the fire dispatch facility and take steps to increase the physical separation and protection from attack, vandalism or any other threat.

Recommendation #19: That the Dawson Creek Fire Department develop a complete business continuity model for 911 calls as well as fire call taking and dispatch for itself and its dispatch clients. This would include a fail-over plan to another centre that could provide service. The procedures for such a fail-over to another location need to be documented and regularly tested.

Recommendation #20: The DCFRD should review the provision of alternate electrical power for essential communications equipment and, if possible, have the fail-over occur automatically once the primary power is lost. In the interim, the dispatcher and all staff at the DCFRD should be made familiar with the procedure to start the standby generator and to transfer power to the EM panel.

Recommendation #21: The DCFRD should begin tracking areas within the City and the fire protection district where radio and paging coverage is poor or non-existent.

Recommendation #22: The DCFRD should consider implementation of a battery conditioning program to ensure the highest possible charge and capacity for portable radio batteries and to maximize their useful lifespan.

Recommendation #23: The DCFRD should consider the implementation of mobile workstations in fire apparatus to store data related to the road network, hydrants, pre-plans, inspections, hazardous materials, operational guidelines and any other required information.

7. Options

Service Delivery

- That the DCFRD make greater use of its volunteers by calling them back to assist with fire suppression and overhaul where possible. The review notes they are seldom called out and coupled with the high turnover rate, reduces the available firefighting force for Dawson Creek.

Fire Protection Boundaries/Options

- The DCFRD responds within a mutual aid agreement with a limited number of partners each of which is an order of magnitude smaller than Dawson Creek. There is a need to ensure that all agreements in support of mutual aid are reviewed to ensure they are current and address all matters related to the functions to be performed as well as costs.

Administrative & Management Model

- There are no recommendations in the near term to the organizational model used by Dawson Creek. There is however an urgent need to provide a higher level of fire fighter and fire officer training. This is especially important in the case of the imminent retirement of the majority of Captains who will be replaced by much younger firefighters with relatively few years of service. The Department requires a better training facility as well as a focus on command training for Captains. The Department must also address the near-term retirement of the Deputy Chief and the Fire Chief.

8. Conclusion

The recommendations dealing with the issues of fire training including officer training as well as vulnerabilities related to fire dispatch and emergency communications are the most important and should be given the highest priority. In the case of training, an upgraded facility is a first priority along with a program to focus on command and emergency scene management for current and future Captains.

Likewise, the single points of failure in the emergency dispatch system should be immediately addressed with the City of Dawson Creek and the Peace River Regional District to clarify the demarcation between those owned by Region and by the City. Following this, a complete review to address and remedy system vulnerabilities should be developed. Options will include development of secondary systems, defined backup procedures and further training of staff. An additional option may include outsourcing of this service.

Plans to develop a funding model to acquire additional apparatus such as the third Engine and an upgraded Rescue Truck as well as updates to the fire hall should be initiated in 2012 for action starting in 2013. A review of the bylaws and the various agreements should also be planned for 2012 to ensure each is current and addresses the needs of Dawson Creek including indemnification for all identified risks.

In summary, the DCFRD has made good strides at addressing staffing and equipment. The Department is also taking steps to address the issues raised by the recent FUS survey and a majority of these can be considered as being ‘in progress’. The recent addition of a dispatcher has resulted in a greater availability of a first response crew during the periods of highest call volume.

The most significant challenge facing the DCFRD is the looming retirement of the Captains and Chief Officers and the need to properly and fully train their replacements. This is a manageable issue but one that will require a considerable investment in training facilities and programs in the very near term. The reason for this priority relates to the time required to build required facilities and then to train and then mentor the future officers and to identify a succession plan for the Chief and Deputy.

9. Appendix 1: Consultant Resumes

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.

In 1998, Dave was hired by E-Comm, Emergency Communications for Southwest BC as its first Director of Operations. In this role he was a member of the founding senior management team, and was responsible for the transition of the Regional 9-1-1 Control Centre staff from the Vancouver Police Department to its current location at 3301 East Pender in June 1999. 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. In addition he has completed a number of fire hall location studies for clients throughout the Province, provided transition management services to Vancouver Fire/Rescue as it implemented a new Computer Aided Dispatch system. In 2004, Dave provided technical advice to the Hon. Gary Filmon as part of the Firestorm 2003 Review. In 2005, along with ICTconsult Inc. he conducted a full review of the radio system for the fire departments on the Sunshine Coast Regional District and in 2006 he conducted a similar review for the Central Okanagan Regional District.

More recently, along with a number of associates he has conducted master fire plans for West Vancouver, Saanich, North Vancouver District, Sidney, Port Moody, North Vancouver City and Pitt Meadows in addition to managing major communications upgrades for E-Comm and the Regional District of Fraser-Fort George along with fire hall location studies for the Fort St. John, Central Saanich and Pitt Meadows Fire Departments. He has also led a number of communication centre reviews for clients such as the Prince George Fire Department, the City of Lethbridge Public Safety Communications Centre and the Toronto Fire Service. He has recently conducted fire services reviews for the Comox Strathcona, Columbia Shuswap Squamish Lillooet and Alberni-Clayoquot Regional Districts. He also was retained by the Fire Commissioner to advise her office in connection with the project in 2009 to develop a region-wide mutual aid agreement that encompassed the Olympic corridor up to Whistler and more recently is developing a fire services resource allocation strategy for 2011.

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, a Director of the Justice Institute of British Columbia Foundation, a

member of the National Fire Protection Association (NFPA), the National Emergency Number Association (NENA), the Association of Public-Safety Communications Officials (APCO), the Fire Chiefs' Association of British Columbia (FCABC), the Canadian Association of Management Consultants (CAMC) and is a member of the Public Safety Communications Advisory Committee of Kwantlen Polytechnic University.

Wayne Humphry

Wayne Humphry is recently retired from Vancouver Fire/Rescue after a career spanning 31 years. During this time, Wayne served in fire suppression, rising to the rank of acting Battalion Chief. He also worked extensively with Vancouver Fire's training division where he was seconded 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[32].

Wayne has developed in-house Officer Development seminars including ProBoard certified programs for various career fire departments throughout the province, for Capilano University and the Justice Institute of BC as well as a High-Rise Firefighting Manual and Operational Guidelines.

He is an accredited instructor with the Fire Academy and his subject expertise includes Fire Officer Level 1, 2 and 3 programs – Emergency Incident Management (BCERMS/ICS, Command Post and EOC operations, fire behavior, strategies and tactics); Incident Safety Officer; and Live Fire Exercises Levels 1, 2 & 3. Wayne was also a Fire and Rescue Services Subject Matter Expert for the JI's Critical Incident Simulation Centre's program development for multi-agency, multi-jurisdictional incident management training.

Wayne has worked with DMA on the study examining the issues related to the establishment of a fire department by the Columbia Shuswap Regional District in the Kicking Horse Mountain region. In addition Wayne teaches emergency incident management to a range of clients in BC and Alberta including Calgary, North Vancouver District, Burnaby and other fire departments.

Ian MacDonald

[32] Mr. Humphry has trained fire fightersfirefighters and officers from a large number of fire departments in BC including: Adams Lake, Armstrong-Spallumcheen, Ashcroft, Barriere, Beaver Creek, Burns Lake, Celista, Chase, Comox, Cowichan Bay, Cranbrook, Cumberland, Dawson Creek, Deep Bay, Enderby, Esquimalt, Fernie, Fort St James, Fort St John, Golden, Kamloops, Kelowna, Langford, Langley City and Township, Logan Lake, Loon Lake, Lumby, Malakwa, Mission, Nanaimo, North Saanich, Oak Bay, Peachland, Pemberton, Port Alberni, Port Alice, Prince George, Princeton, Quesnel, Salmo, Sayward, Smithers, Sooke, Squamish, Summerland, Terrace, Vernon, View Royal, West Vancouver, Whistler, Williams Lake, Windermere and Yale.

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 agreements and corporate restructurings and corporate acquisitions. Ian became a partner in Davies Ward & Beck in 1994 and an equity partner in 1996.

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.

With DMA, Ian has worked on the Comox Strathcona Regional District Fire Innovations project, the fire service reviews for the Columbia Shuswap Regional District ("CSRD"), Squamish-Lillooet Regional District, Pitt Meadows and the Alberni-Clayoquot Regional District, and the quality assurance and operations review for the City of Toronto's fire dispatch operations. The work for the CSRD included assisting with the development of bylaws to implement the recommended reorganization. He also has advised the CSRD regarding the development of a new fire department for the Kicking Horse Mountain area, worked with the Alberni-Clayoquot Regional District and City of Port Alberni to develop and implement an automatic aid arrangement between their respective fire departments, and is currently working on projects for the Office of the Fire Commissioner and a fire department audit for the Regional District of Fraser-Fort George.

Geoff Lake

Geoff Lake is a talented professional with over 33 years experience in the fire service. He has extensive experience in budget analysis, strategic planning/analysis, project management, executive leadership, contract negotiations and organizational change. Applying this experience successfully, results in effective and practical business solutions for organizations.

During his long and successful career in the City of Richmond's Fire-Rescue Department, Geoff rose to the position of Deputy Fire Chief - Administration responsible for the Fire Prevention Division, the Mechanical Division, the Public Education Division, and Communication/ Technology. He managed a $22 million annual budget and was responsible for the procurement of capital equipment including fire apparatus and other fire services equipment. From 2004 to 2007, Geoff oversaw the completion of two new fire halls, from the initial planning and budgeting stage through design and final construction. These complex projects included

conducting fire hall location studies, liaising with the city real estate agent to procure the property, and working with architects, planning and the city project manager to design and oversee construction of the facilities.

With responsibility for the communications and technology requirements of the Department, Geoff oversaw the selection and implementation of the new Records Management System (RMS) and a new Computer Aided Dispatch (CAD) System. He took an active role in setting up Project Fires, a jointly owned/operated fire services RMS currently hosted by E-Comm. In 2003, under Geoff's leadership, Richmond Fire Rescue took a lead role in the emergency services Combined Events Radio Project (CERP). The project provided emergency personnel from all services with the ability to communicate directly with each other prior to arriving on scene.

During his career Geoff had the opportunity to practice labour relations from the perspectives of both a union representative and a senior manager. These experiences have left him with a clear understanding of just what it takes to build and maintain healthy, respectful and beneficial workplace relationships. As Deputy Chief he was responsible for overseeing and implementing interpretation of the collective agreement.

Since retiring from the fire service in 2008, Geoff has been working as a consultant within the public safety industry, most recently spending 13 months as Olympic Coordinator for Safety & Security for the City of Richmond 2010 Olympic Festival Site. He is currently working with Dave Mitchell and Associates on a project involving the inspections and audits of the Regional District of Fraser Fort George volunteer fire departments and on the development of a Fire Services Emergency Resource Mobilization Program for the Office of the Fire Commissioner.