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City of Courtenay

East Courtenay Fire Training Ground Fire Hall Project

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1.0 EXECUTIVE SUMMARY

The City of Courtenay provides Fire and Rescue Services to just over 24,000 residents in the city itself and an additional 10,700 residents in 3 contracted areas adjacent to the city. As part of this report we reviewed City and fire department policies and procedures, zoning applicable to the proposed site, the official community plan and the fire department budget. In addition, the Project Definition Report by Fletcher Pettis Consultants and the draft Fire Underwriter Survey Report were also reviewed. While this report offers additional information and suggestions regarding governance and current operational capabilities of the Courtenay Fire Department, the two main areas of focus surround the decision to construct a second fire station in East Courtenay and the development of a training ground on the same property.

On June 11, 2012 Council passed a resolution to "*approve proceeding with the design and construction of the East Courtenay Fire Hall/Training Centre".* In March 2014 the East Courtenay Fire Hall/Training Centre Project Review Committee contracted FireWise Consulting Ltd to review the Project Definition Report (Fletcher Pettis), the draft Fire Underwriters Survey Report and other pertinent information relevant to this project and to make recommendations that would assist the Committee in making its final report to council.

With regard to the choice of sites between Ryan Road and Waters Place we concur with the Fire Underwriters Survey that the Waters Place location is the preferred site for both a new second fire station and a new training ground development.

We believe the training ground is a good long term investment for the City of Courtenay. The project as proposed will offer decades of training opportunities for firefighters and workers in other City of Courtenay departments such as Public Works for confined space

training. The site is considerably larger than the training site in Comox and as such offers increased opportunity for multi-engine company scenario based training. The Courtenay Fire Department would still use the Comox facility for "live fire" training but most other firefighter training and skills maintenance drills would take place at the new training grounds. A new properly planned training ground would complement the Comox facility by offering other training not available through the Comox Training Centre or elsewhere in the immediate area.

Building your own facility offers control over future training costs, scheduling availability and the ability to build training props to cover off specific risks factors that may be unique to the City of Courtenay (Hazardous processes etc.) Courtenay Firefighters are trained to the National Fire Protection Association (NFPA) Firefighter, 1001 Standard Level II. New recruits are expected to complete this level of training within two years of becoming a regular member of the department. The undertaking by the department to achieve this goal is commendable and is a positive reflection on the current leadership within the fire department. The new training ground will offer an enhanced opportunity for front line officers and incident commanders to maintain and improve their leadership skills. Given the annual attrition rate and the additional firefighters required to populate a second fire station, building the training grounds first would be appropriate in order to facilitate what will probably be the largest rookie training class in department history.

A second fire station located in east Courtenay makes both fiscal and operational sense for the following reasons.

Should a significant seismic event or flooding occur, a second station in east Courtenay would ensure at least some degree of fire/rescue services for the area where currently more than 50% of the city's population reside. In a seismic type of an event, it is possible both access bridges over the river between east and west Courtenay could be compromised and your mutual aid partners will likely be overwhelmed by demands for service in their own immediate jurisdictions.

The economic drivers for your community that operate in this area will benefit from the increased level of service.

There may be an opportunity for insurance rate premium reductions based on response distances for businesses and for some residents located in East Courtenay.

While it is true that service levels will be more equitable for East Courtenay residents, a second station also will improve the operational readiness throughout the city. The ability for fire services to respond to an incident from two geographically separated fire stations can be extremely beneficial from both a tactical and liability perspective. An additional new engine at this fire station will also build in redundancy when other engines are out of service and increased capacity when the fleet is at full strength.

Current and future development in the north east part of the city will be better served from decreased response travel distance and accessibility.

The City of Courtenay operates a well-equipped, well trained and well managed fire department. Considering the significant development and population growth east of the Puntledge/Courtenay River System we believe Council's decision in July 2012 to proceed with a second fire station is appropriate and will offer significant positive benefits for its citizens. Development of a training ground on the same site as a second fire hall is also a sound strategy to provide an area for both current and future firefighters to learn and maintain the skills necessary to safely and efficiently provide fire and rescue services to the City and its fire protection contract areas.

"A fire department does not exist for what it does; it exists for what it may have to do."

Neil Hintze, FDNY Battalion Chief

1.1 SUMMARY of RECOMMENDATIONS

Recommendation:

5.0.1 That the City of Courtenay review Bylaw No. 2556 to ensure that the Courtenay Fire Department is granted authority to provide specific services as determined by Council.

Recommendation:

7.1.1 That the City of Courtenay construct a scenario based fire training ground at the Waters Place site without further delay so firefighter training can be proactively managed to most effectively meet the City's firefighter training needs.

Recommendation:

7.3.1 That the Courtenay Fire Department develop a practical fire officer training program which complements the Comox Fire Training Centre firefighter training programs.

12.0.1 Recommendation

That the City of Courtenay construct a satellite fire hall on the Waters Place property as per Council Resolution of June 11, 2012 with a target in service date of 2017.

Phasing Option 1 – CFD Fire Training Ground
Proceed with the design and construction of the Courtenay Fire Training Ground without delay in 2014 to be ready for service in early 2015.

Phasing Option 2 – East Courtenay Fire Hall
The East Courtenay Fire Hall planning to start in 2015 and built in 2016 ready for service for early 2017.

2.0 INTRODUCTION

The City of Courtenay contacted FireWise Consulting Ltd. (FWC) as a professional service experienced in the fire protection field and as a neutral third party to review relevant documents and information pertaining to the development and construction of a Courtenay Fire Department Training Ground and a second fire hall in east Courtenay.

A resolution passed by Courtenay City Council on June 11, 2012 was to proceed with the design and construction of the fire training ground and fire hall. On November 5, 2012 Council passed a second resolution to create a select committee to review the project proposal.

FWC met with City of Courtenay Financial Officer and Fire Chief Don Bardonnex and Deputy Chief Kurt MacDonald to establish the scope of the project and to gather information. It was expressed that time is of the essence and that an unbiased opinion in the form of a report with recommendations from a neutral third party experienced in the fire protection field was needed.

The deliverables in the report are to specifically review and address:

1. The need for a satellite fire hall in East Courtenay;
2. The need for a scenario based training ground;
3. Recommendations on site location; and
4. Recommendations on the phasing option for construction of the fire training grounds and satellite fire hall.

Work on this report started immediately by gathering documents, interviewing staff and touring the community and the Comox Fire Training Centre.

2.1 DISCLAIMER

This report is being submitted for your review and consideration. FWC makes no representation or warranty to the Recipient with respect to the information and shall not be liable for any errors or omissions in the information or the use thereof.

3.0 BACKGROUND

The City of Courtenay with a current population of just over 24,000 has a land base of 29.4 sq. km containing over 12,000 properties. In addition the contracted fire service area protected by Courtenay Fire Department covers an area of 153.7 sq. km and has a population of 10,696. The Courtenay Fire Department is established under the Fire Protective Services Bylaw # 2556, 2008.

Courtenay Fire Department provides Fire and Rescue services from one fire hall located at 650 Cumberland Road. A total of 6 career and 36 paid on call volunteer firefighters respond to both emergency and non-emergency calls within the City of Courtenay and surrounding contracted fire protection districts. The Courtenay Fire Department delivers services using 3 Engines, 1- 75 foot Quint (Ladder Truck with pumping capabilities), 1 water tender, 1 heavy rescue, 2 command units and 3 small vehicles.

The community is divided geographically east and west by the Courtenay and Puntledge Rivers. Access between the east and west sides of the community is provided by two bridges, one at 5th Avenue and a second at 17th Street. In recent years the development of the east side of Courtenay has resulted in property increased improvement values and a population marginally exceeding those in west Courtenay.

The recent historical growth experienced in Courtney exceeds both the provincial and national average and future growth is projected in the Official Community Plan (OCP) to be between 1.5% and 3.5% per annum. This growth in both east and west areas of Courtenay will continue to increase demands for fire service delivery.

4.0 COMMUNITY RISK ASSESSMENT

A cursory fire risk assessment in the City of Courtenay was undertaken to determine if the fire department is equipped, staffed and trained to meet the most likely to occur type of fire/rescue event. The City of Courtenay is essentially divided into East and West Courtenay with the division being the Puntledge/Courtenay River system.

The local economy is primarily a service based economy with no major single industry such as a pulp mill or mine as the major employer for the region. The largest area employer is CFB Comox located on the east side of the Town of Comox.

Courtenay has a higher than average retirement community population which adds to the stability of the local economy. There are many commercial enterprises that provide a wide range services to region. There are residential subdivisions located throughout the City with the 831 acre Crown Isle Resort and Golf Community in East Courtenay being a high profile development in the heart of East Courtenay.

The downtown core has many older retail and office buildings some of which have significant historical value to the community. Some of the buildings do pose a fire risk but with the City of Courtenay fire inspection and prevention program, the risks are manageable.

A few blocks west of the Courtenay fire hall lie the E&N Railway tracks. The rail road runs completely through the City of Courtenay from south to north. At the time of this report, the E&N rail line is not operating so it does not pose too much of a problem, however, plans are in place to upgrade the rail bed plus some bridges so it can resume operations. A rail line running through a community is a concern to a fire department because of the cargo that may be carried plus there is a risk for trains to cause sparks igniting fine fuels along the right of way during the dry months. Along any rail road there is also the likelihood for motor vehicle accidents at rail road crossings.

On the west bank of the Courtenay River, near the estuary lies the Courtenay Airpark. This City owned facility operated, by the Courtenay Airpark Association, has hangar space and fuel available for the recreational aviators that use this airfield. The airpark is not

considered to be an overwhelming fire risk however aircraft incidents do require some specialized fire and rescue training to efficiently mitigate.

On the south side of the City there are several large retail shopping centres along Cliffe Avenue with well-travelled arterial roads leading up to the Inland Island Highway and the Village of Cumberland. To the west and north of the "downtown" area there are mature residential neighborhoods and multiple apartment or condo units. In the City of Courtenay, apartments, condos and low income housing units appear to be the greatest concern with respect to fire incidents.

North Island College has a modern campus in East Courtenay and a new 153 bed hospital situated in East Courtenay is planned to open in 2017. There are also major retail outlets, big box stores such as Superstore, Costco, Home Depot and several automobile dealerships located in East Courtenay. In addition to the large commercial enterprises there is the Crown Isle Resort and Golf Community which houses permanent homes and short term rental units in addition to hotel villas for tourists.

The City of Courtenay Official Community Plan states; "*Residential growth is expected to continue as the demand for new housing will be driven by the desire of external individuals seeking a milder climate and opportunities provided in the Comox Valley.*

The majority of new housing will occur through the subdivision of larger vacant lots. The recent trend has seen the majority of this development to occur in East Courtenay. With the amount of developable land in East Courtenay this trend will likely continue".

Automobile crashes continue to be a common occurrence which Courtenay Fire Department is dispatched to. According to ICBC, there were 1,900 motor vehicle accidents in Courtenay in 2012 resulting in 580 injuries plus another 20 incidents involving pedestrians. As the community grows this type of incident will continue to occur.

It is fortunate that Courtenay Fire Department has access to a good water system in its primary response area, and it routinely dispatches a water tender to areas of its response district which do not have hydrants. Courtenay Fire Department does have mutual aid agreements with neighboring fire departments who can be called for more resources as required.

Analysis of recent fires indicate that Courtenay Fire Department has the equipment for mitigating the most likely to occur incident. It is obvious however that with all the fire rescue equipment located on the west side of the river and only two bridge crossings, the east side is vulnerable. The flood experience of November, 2009 is still fresh in the minds of Courtenay Fire Department as they recall having to stage fire/rescue equipment in East Courtenay. If another major seismic event happens such as the earthquake of 1946, the bridges may be compromised and an engineering assessment completed before traffic will be allowed to use them.

Although a formal risk assessment was not conducted by FWC, it would appear from our tour of the district that Courtenay Fire Department is adequately equipped for structural fire suppression, and auto extrication but has limited wild land interface suppression capability. A risk management issue identified however is that all the fire rescue equipment is centralized in West Courtenay.

5.0 BYLAWS

Courtenay Fire Department derives its authority to operate from the City of Courtenay Bylaw No. 2556. This bylaw establishes the fire protection regulations but does not specifically state what services Courtenay Fire Department is authorized to provide. Perhaps in the definitions section the following may be considered to clearly define fire protection in the bylaw. +

"fire protection" means all aspects of fire safety and includes,
(a) fire prevention,
(b) firefighting,
(c) fire suppression,
(d) BC Fire Code, fire hazard and fire safety inspections, including inspections required by the Fire Services Act and this bylaw,
(e) pre-fire planning,
(f) fire investigation,
(g) inspecting, monitoring and advising on hazardous materials storage and handling,
(h) public education and information in relation to fire safety and prevention,
(i) training, advising and other development of Members in relation to the activities listed as (a) to (h) in this definition,
(j) Authority to enter in to Mutual Aid or Automatic Aid agreements,

Recommendation:

5.0.1 That the City of Courtenay review Bylaw No. 2556 to ensure that the Courtenay Fire Department is granted authority to provide specific services as determined by Council.

6.0 COUNCIL POLICY

Similar to most municipalities, City Council has adopted specific policies. Policies are a guideline for City employees to follow in making decisions in the best interests of Courtenay. Policies provide a framework for the delegation of decision making, eliminate misunderstanding, reduce uncertainties and enable goals and objectives to be met. Policies should be outcome focussed with considerable latitude exercised in decision making, dependent upon circumstances, otherwise they will simply be procedural rules. In making decisions however, the intent of the policy must be understood and followed. Many policies have been created after an action was taken which seemed like the "right thing to do at the time" but the decision may have been called into question later resulting in a policy.

The purpose of policies are intended to:

- promote common understanding of Council's policy objectives
- provide direction to allow Administration to meet Council's policy objectives
- facilitate better and more timely decisions
- ensure uniformity in the interpretation and implementation of policy
- allow personnel to know what is expected of them
- ensure that similar situations are handled consistently
- promote delegation of decision making to the level that must face the problem or situation when it arises
- encourage coordination and integration of actions and plans within and across functional area and departments

- address problems or situations that are repetitive or recurring

Council policies for the fire department are often inadvertently overlooked and there is often an expectation that the fire department is doing things appropriately. Financial policies are generally in place to ensure financial accountability but further policies are required to provide the necessary direction from Council to CFD. The provision of fire rescue services requires considerable preparation before any emergency response is made. Fire and rescue incidents are high risk, low frequency events often with severe consequences when things go wrong. It is therefore important that Council policies for the fire department are in place. Without clear policies from Council, a fire department will self-assign which may be contrary to the wishes of Council which could expose the City to unnecessary liability.

Council policy should provide the framework for the fire rescue service to operate including a clearly defined list of services, limitations of service, geographic response areas, partnerships and training standards.

7.0 TRAINING

7.1 Training Standards

Through a Ministerial Order the Province of BC has identified that the National Fire Protection Association (NFPA) training standards are recognized across the Province. NFPA 1001 and 1002 are the most widely used firefighter training standards. NFPA 1001 outlines the minimum job performance requirements for firefighters whose duties are primarily structural in nature. NFPA 1002 identifies the minimum job performance requirements for firefighters who drive and operate fire apparatus.

CFD has set a very high standard for its firefighters based on NFPA Standards. The curriculum for these standards is both academic and practical. Examinations on theory are one component but many subjects in this standard have a practical evaluation

component where recruit practical skills are evaluated. A CFD fire training ground would enable CFD to meet their recruit training objectives and allow veteran firefighters to maintain their skill competencies and mentor recruits.

A scenario based fire training ground would provide opportunity for CFD to train officers in a cost effective manner adding to the sustainability of the fire service.

Caution:

Many local jurisdictions adopt some or all of NFPA's fire codes and standards. Routinely, these communities update to new versions of the standards. Where an agency does so generally, it may automatically and inadvertently, adopt all changes to them (thus incorporating NFPA[1] 1001, 1002, 1710 or 1720); alternatively, the agency may have to take an affirmative act to adopt the applicable standard. Of particular concern, some fire departments (as a matter of department policy) may start to use the standard as a guide to their activities without consulting with their governing bodies or their legal counsel, and without awareness of the liabilities and obligations this could impose on their local agencies. As the local subject expert on relevant fire service standards, the Fire Chief should ask legal counsel to review department policies in addition to the code and policy adoption process for their jurisdictions, and have legal counsel advise the fire department accordingly, so that the AHJ can act purposefully in considering whether to adopt all or any part of any NFPA or any other Standard as written.

NFPA 1710 and 1720 are the Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career and Volunteer Fire Departments, respectively. These two standards attempt to define levels of service, deployment capabilities, and staffing levels for career and volunteer departments.

[1] NFPA 1001: Standard For Fire Fighter Professional Qualifications; NFPA1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public By Career Fire Departments; NFPA 1720 – Volunteer Fire Departments

Short cuts in training must be avoided and training must be as realistic as possible. Emergency service personnel will instinctively revert to their training in high risk high consequence events.

Scenario-based training works by structuring training to mirror how the job is actually performed. Each lesson is introduced via a realistic scenario that requires firefighters to utilize a variety of skills simultaneously. Scenario-based training is an amalgamation of knowledge and skills-based training, incorporating psychomotor coordination and reinforcing a survival mind-set in the student.

7.2 Training Ground

Training firefighters is not optional. Once a community has decided to establish a fire department it also accepts the responsibility to provide appropriate staffing, equipment and training. It must meet a reasonable standard of care.

Fire department training in BC continues to evolve and the industry standard for both career and volunteer firefighters has dramatically increased in the last 20 years. This demand is required to meet the regulated expectations of WorksafeBC, to provide for increased public and firefighter safety and to meet the fast changing and dangerous physical environments in which firefighters are asked to engage.

In reviewing the Project Definition Report from Fletcher Pettis Consultants Ltd. and the Fire Underwriters Survey – City of Courtenay Fire Insurance Grade Update Report 2014 from SMC –Opta (FUS), in general we support the conclusions and observations made.

Scenario based training is widely accepted as best practice for firefighter and fire officer

training for fire ground operations. This is where education, experience and hands on training all come together in a controlled, safe atmosphere. Lessons learned and skills acquired here will have a direct positive result on outcomes experienced in the community.

As part of our process we viewed the site located at Waters Place and concur that this makes an excellent choice for siting of a second fire station and training ground facility. The training area site is large enough to facilitate scenarios using multiple engine and ladder companies. This is particularly important to developing officers' skills for their command roles at real events. The site plan 2b (Fletcher Pettis report) is well laid out and provides enough space to conduct multiple training activities simultaneously and with enough separation to achieve this safely.

With regard to props, the use of natural gas is becoming the accepted norm for scenario based firefighter training. For this application and because of the physical properties of natural gas it is a safer choice of fuel than propane in that it is lighter than air and will dissipate quickly in the event of an unplanned escape. Propane is heavier than air and will collect in lower geographic features of buildings or the topographic features of the site or land adjoining the site. Hydrocarbon based fuels are being used less because of their impact on the environment and the possible negative impact on neighboring properties to the training ground. The combustion of non-carbon based materials is consistent with the goals to reduce greenhouse gas emissions set out in the City's Official Community Plan.

The fire service has become the "go to resource" in most communities for many emergency based challenges. In addition to historical firefighting duties, todays fire departments are called on to provide services for auto extrication, flood relief, landslide events, confined space, technical rescue, high angle rescue, hazardous materials and first medical response.

Good quality training not only prepares firefighters to do the work asked of them but also has a significant impact on volunteer retention. The cost including time and financial

commitment from the City to train a volunteer firefighter is substantial. The retention of these individuals is vital to ensuring a core group of workers who are highly trained and experienced. Section 11 Recruiting and Retention in this report has more information on how important training is in the retention of members. Table 2 in Section 11 reveals the years of service of CFD members. The current training program will have a new recruit able to assist at incidents within one year of joining even though they are still considered recruits for at least two years. As part of the sustainability of the CFD, more new recruits need to be taken on. A 16-18 month training schedule is required for new firefighting staff.

We understand that Courtenay has used the Comox Firefighter Training Facility for some of their drill needs. The programs offered by Comox to many outside fire departments and the amount of training that has been accomplished in that facility is highly remarkable. But does it negate the need for Courtenay to have their own training ground? In our opinion, it does not.

Having your own training ground for your fire department has many advantages.

1. You control your own destiny in that your facility can be designed to provide training for risks that may be unique to your community.
2. The physical footprint of the Courtenay Fire Training Ground is larger and therefore is more conducive to complex scenarios that involve multiple pieces of apparatus and multiple fire companies.
3. Scheduling and availability is determined by the City of Courtenay Fire Department.
4. Policy regarding use, care and control of the training facility practices and procedures are determined by the City of Courtenay.
5. The cost of training will be controlled by the City of Courtenay.

6. Other city departments such as public works can use the facility to qualify and practice confined space procedures and other technical programs encountered in their work.

Recommendation:

7.1.1 That the City of Courtenay construct a scenario based fire training ground at the Waters Place site without further delay so firefighter training can be proactively managed to most effectively meet the City's firefighter training needs.

Recommendation 7.1.1 rationale to build on the Waters Place site is simple.

- The land is owned by the City.
- It is properly zoned to allow for this type of facility.
- It is adequate in size and located in an area with good access to major thorough fares.
- Servicing costs for utilities will be substantially lower than the Ryan Road alternate site.
- Site preparation would be far less than the suggested alternate site.
- It is flanked by other commercial enterprises with a small exposure to some residences that would actually benefit by having a fire station in such close proximity.
- Impact on the environment will be minimal.
- It conforms to the Official Community Plan.

7.3 Fire Officer Training

Fire Officer training is a component that is identified in the FUS draft report as an area that would benefit from improvement. Fire Officer training to the NFPA 1021 Standard is available from several sources but such training is primarily academic. While the academic component of officer training is important, it must have a practical component for fire officers to effectively learn how to lead in stressful situations. With a scenario

based fire training ground, command and control capabilities of officers can be evaluated in controlled events using stressful simulations which involve multiple engines and ladder companies.

Evaluating an incident commander during an incident is problematic. Command officers need the opportunity to learn how to command, maintain control and have situational awareness in stressful simulations before they assume command of an incident. Fire events are high risk, low frequency, time compressed in nature with little time to think things through. Command decisions must be made sometimes with very little information. As incident commanders are generally fire officers, they need the opportunity to train as officers in charge in real life situations in order to avoid death or injuries and to minimize property loss.

Recommendation:

7.3.1 That the Courtenay Fire Department develop a practical fire officer training program which complements the Comox Fire Training Centre firefighter training programs.

8.0 FUS REPORT

A draft report from Fire Underwriters Survey was supplied as part of this review. This comprehensive report provides valuable information with respect to all aspects of the City of Courtenay and the Courtenay Fire Department and makes recommendations on how the fire service could be enhanced resulting in possible reductions of fire insurance premiums.

Fire Underwriters Survey™ (FUS) is a national organization administered by OPTA Information Intelligence, formerly CGI Insurance Business Services, formerly the Insurers' Advisory Organization and Canadian Underwriters Association. FUS provides

data on public fire protection for fire insurance statistical work and underwriting purposes of subscribing insurance companies. Subscribers of Fire Underwriters Survey represent approximately 85 percent of the private sector property and casualty insurers in Canada.

Fire Underwriters Survey™ Certified Fire Protection Specialists conduct detailed field surveys of the fire risks and fire defenses maintained in built up communities (including incorporated and unincorporated communities of all types) across Canada and the results of these surveys are used to establish a Public Fire Protection Classification™ (PFPC) for each community. While Fire Underwriters Survey is not involved in rate making matters, the information provided through the Fire Insurance Grading Index is a key factor used in the development of Commercial Lines property insurance rates. The PFPC is also used by underwriters to determine the capacity of risk they are willing to assume in a given community or section of a community.

The overall intent of the PFPC system is to provide a standardized measure of the ability of the protective facilities of a community to prevent and control the major fires that may be expected to occur by evaluating in detail the adequacy, reliability, strength and efficiency of the protective facilities and comparing the level of protection against the level of fire risk in the built environment.

The Fire Underwriters Survey also uses PFPC information to develop the Dwelling Protection Grade (DPG), which is utilized by Personal Lines insurers in determining property insurance rates for detached dwellings (with not more than two dwelling units). The Dwelling Protection Grade is a measure of the ability of the protective facilities of a community to prevent and control the structure fires in detached dwellings by evaluating the adequacy, reliability, strength and efficiency of the protective facilities and comparing the level of protection against the level of fire risk associated with a typical dwelling.

The fire insurance grading system used does not consider past fire loss records but, rather, fire potential based on the physical structure and makeup of the built environment.

There are two insurance classifications to be concerned with, residential DPG and PFPC. Of these two classifications, the City of Courtenay has attained the highest possible classification of 3A for the area within the City protected with fire hydrants without going to a fully career staffed fire department.

One of the criterion for this grade is the distance from a fire hall which is 8 kilometers. Almost all of the residential housing units within the City of Courtenay are within this recommended distance.

However, the same is not so for the commercial and public buildings and this is one area where the City of Courtenay could improve the community fire insurance rating for the PFPC. The recommended distance to a commercial or public building from a fire hall is 2.5 kilometers with the maximum distance of 5 kilometers. The FUS draft report makes recommendations that an East Courtenay Fire Hall would mean the commercial and public properties would likely experience reduced fire insurance premium rates if they are located within 5 kilometres of a fire hall.

The FUS report also makes a recommendation that Courtenay Fire Department should have another engine in its fleet to meet the overall required fire flows for the City.

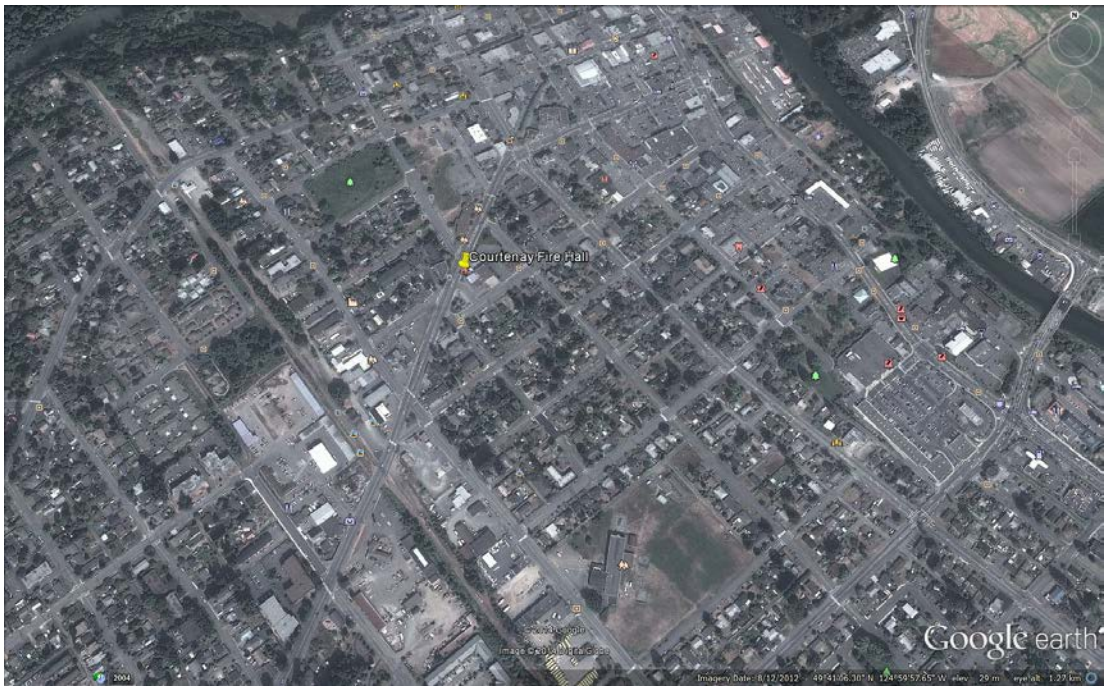
FWC concurs with the recommendations of FUS report with respect to adding an East Courtenay Fire Hall and the Courtenay Fire Training Ground.

Fire insurance rates now also consider using community loss experience ratings and other factors including personal circumstances of the insured and not simply the rating of the community fire department. If more capacity is added to the Courtenay Fire Department, the benefit to be realized with respect to reduced insurance rates will be for the commercial and public building owners and occupants. In general terms, any

increase in taxes to fund the new fire training ground and fire hall in East Courtenay should be offset somewhat by reduced PFPC insurance premiums.

9.0 FACILITIES

Located at 650 Cumberland Road, the Courtenay fire hall is situated on the edge of "downtown". To the north and west are light industrial and commercial properties while directly to the east are offices. The fire hall site is on a triangular shaped lot with single family dwellings to the south across 10th Street. In consideration of the residential area to the south, most fire outdoor fire department training takes place on the Cumberland Road side of the fire hall. The training tower is also located on the northeast corner of the property. The location of the Cumberland Road fire hall does not allow any for type of burning for training purposes and no possibility for hands on auto extrication training to take place.



The fire hall itself is a well designed and built facility that will serve the community well for many years as the administration and department headquarters. It has a large meeting training room on the second floor where training lectures and workshops can be held.

10.0 FIRE APPARATUS

CFD has 6 major fire apparatus and 5 support vehicles. The following table lists the apparatus with specific information to each unit.

Unit ID	Type	Year	Pump Size	Tank Size	Manufacturer	ULC	Age
11	Engine	1995	1050	500	Superior	Yes	19
12	Ladder	2002	1700	500	Smeal	Yes	12
13	Reserve Engine	1988	1050	500	Superior	Yes	26
14	Water Tender	2007	500	1700	Commercial	No	7
15	Engine	2008	1900	800	Fort Garry	Yes	6
71	Rescue	2012	N/A	N/A	Fort Garry	No	2

Table 1

The fire apparatus is well maintained and kept in excellent condition. The pumps and valves are serviced annually and CFD is fortunate to have an Emergency Vehicle Technician (EVT) as one of the full time staff who carries out a routine preventative maintenance program.

CFD has a solid capital asset plan in place so all capital purchases are entered into the plan and a service life identified. At the time of this report, the City and CFD have an Invitation for Tenders to purchase a new engine to replace Engine 11 which is at the end of its service life and will then become CFD's reserve engine once a new engine is in service.

If an East Courtenay fire training ground was developed, Engine 13 which is a 1988 engine, could become a dedicated training engine for use at the training facility. Despite the age of Engine 13, it has been kept in excellent condition and could function as an engine to supply pressurized fire streams.

As noted in the FUS report, at least one additional fire apparatus will be required if a new East Courtenay fire hall is constructed. We concur with this recommendation.

A new engine similar to Engine 15 or the new engine currently being solicited in an Invitation to Tender would be appropriate for the East Courtenay Fire Hall.

11.0 RECRUITING AND RETENTION

Recruiting and retaining members is one of the biggest concerns most volunteer fire departments currently have. CFD currently show thirty six volunteers and six career staff on the roster. The City of Courtenay is obligated to provide for a regular system of fire safety inspections of its public buildings. The career staff are charged with performing inspections in addition to other job functions such as organizing and tracking training of all personnel and updating pre-fire plans. They also carryout routine maintenance of equipment and enter data into the department record management system. Fire department staff review new building plans and developments with a focus on fire safety issues such as sprinkler connections, access for fire department vehicles etc.

CFD is like most volunteer staffed departments in that there is always turnover of personnel for a variety of reasons. Attracting new recruits is not as challenging as ensuring they can be retained. From information supplied to us by CFD there were nine new recruit firefighters taken on in 2013 who have started in the training program.

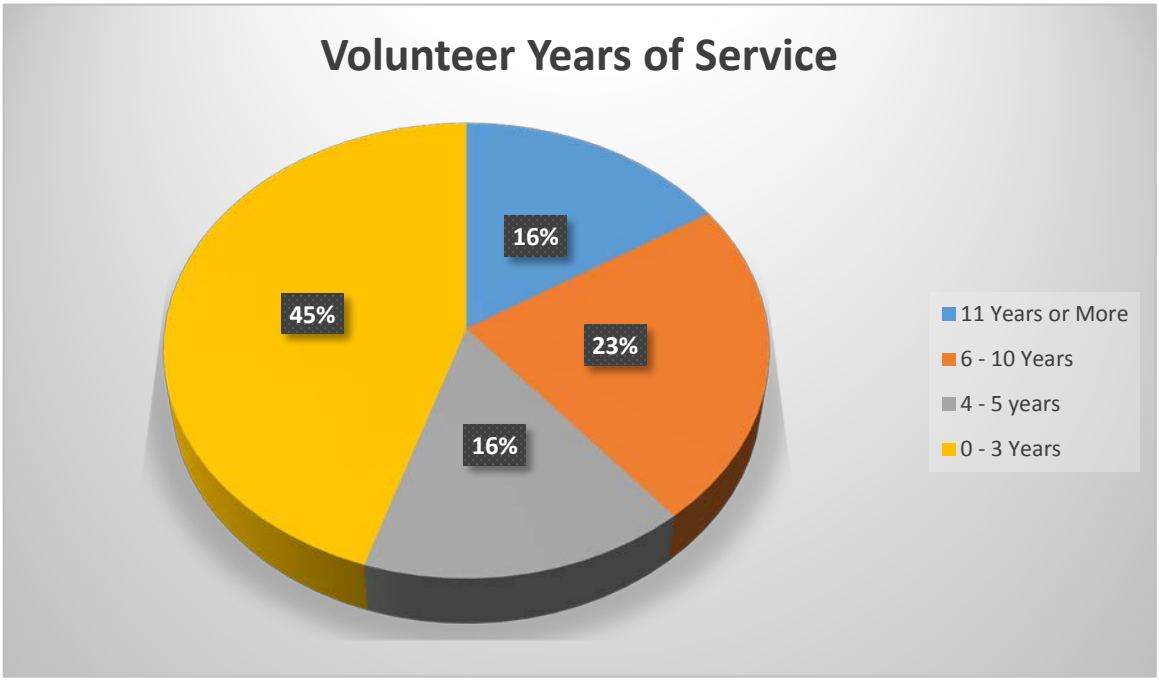


Table 2 – Years of Service

Analysis of the figures supplied to us reveal that 61% of CFD volunteers have five years or less of experience. As part of a sustainable service delivery plan, more firefighters need to be trained in a relatively short time so the trained personnel lost can be effectively replaced with newly trained personnel. CFD has planned to take on 8 more fire fighters to bolster its roster during 2014. Training these new recruits in addition to the previous group of firefighters who started their training in 2013, will require considerable time, organization and expense for the required training which cannot be delivered entirely in-house at CFD.

There are several reasons why people volunteer as firefighters. Upon joining the department new members have high expectations. They are looking for training so they can learn the skills required in the provision of fire rescue services. Their families also have great expectations that the leadership of the department will keep their loved ones safe and not put them in harm's way unnecessarily. Therefore training is very important in the retention of members as is strong leadership and good mentoring. The fire department officers must be seen as leaders and mentors by the members which includes leading by example.

Some proven retention strategies that are working in other departments are simple things such as a swearing in ceremony after a probationary firefighter has been accepted as a regular member. Awards and recognition after defined periods of service are also important. Post-secondary education scholarships for dependent children of firefighters, medical and dental benefits, and annual RRSP contribution to firefighters that increase after specified years of service are other things that departments use as volunteer retention strategies. CFD has a very unique municipal pension plan which is an excellent retention strategy.

Employer recognition by CFD of employers who allow their employees to respond to emergency calls during working hours have proven to be effective and a positive method of building good relations in the community.

The City of Courtenay and CFD are making a significant investment in equipping and training volunteer firefighters and a CFD Fire Training Ground will make the department more efficient and effective at training its staff and volunteers.

Why do people volunteer as firefighters? A study performed in 2007 by Caitlin Myers, Jeffery Carpenter of Middlebury College, Vermont and the Institute for the Study of Labor, IZA of Bonn, Germany determined that people will volunteer as firefighters for three main reasons. They are, Altruism, Reputation and Incentives, in that order[2]. Our experience would bear this out as well.

In the application of Psychometrics[3] we have found that the main reason people want to be involved in any emergency service discipline is to simply help people. The Myers, Carpenter, IZA study concluded that *"volunteer labor supply is determined more by tastes for prosocial activities than by income and costs. In addition, government spending appears to at least partially crowd out volunteering, suggesting that volunteers care both about the level of provision of their product as well as about the act of giving itself".* In other words firefighters put a significant amount of importance on the quality of service they provide. The quality of service they provide and take so much pride in is started through a quality training program.

The reputation firefighters enjoy in society is another reason that a person would want to be a firefighter. Firefighting will provide opportunities for a person to realize the "idealized persona bias"; i.e., through the training and operational responses they will start to become the person they would like to be. A robust and challenging training program is a tool in volunteer retention. Too much time taken in travelling to training venues can work against the overall training objective. Volunteers have busy lives and are

[2] Why Volunteer? Evidence on the Role of Altruism, Reputation and Incentives, IZA DP No. 3021 Jeffery Carpenter, Caitlin Knowles Myers, September 2007, Middlebury College, VT and IZA, Bonn, Germany

[3] **Psychometrics** is the field of study concerned with the theory and technique of psychological measurement, which includes the measurement of knowledge, abilities, attitudes, personality traits, and educational measurement, Psychometric Society, University of North Carolina-Greensboro, Greensboro, NC 27402-6170, USA

only willing to give up their time if the return is worth the time investment. Incentives are not always monetary and are not usually a reason that a person will volunteer. Incentives in a volunteer fire department can be training opportunities where personal growth and job satisfaction are sought. Recognition is also a strong incentive where years of service, special awards and other personal goals are attained with respect to their individual effort.

12.0 EAST COURTENAY FIRE STATION

The five most compelling reasons to build a second fire station in east Courtenay are

1. Improving response times to East Courtenay and the contracted area north of the City.
2. Equity of Fire/Rescue Services on the east and west side of the river.
3. Increased level of fire protection economic drivers and better response times for first arriving apparatus.
4. Mitigating the risk posed by the river system separating East and West Courtenay.
5. As part of the city's emergency preparedness planning this will provide an additional City facility on the east side of the river, on high ground, in which governance or operational duties can be carried out during a significant event such as an earthquake or catastrophic flooding.

With regard to the scope of this report, the FUS report created by FMC –Opta provides a credible prospective when it comes to gathering information to help make a decision in regards to fire station placement, additional volunteer manpower and improved response capabilities.

1. The site located at Waters Place scored better than the site located on Ryan Road.

2. Within the City of Courtenay the Required Fire Flow Points increased dramatically for the first due engine with a second fire station at Waters Place. (from 48.43% to 90.15% of available points)
3. The City received credit for 2.83 Engines out of a maximum available credit of 4. An additional Engine at the 2nd hall would bring the city much closer to achieving the maximum credit available.
4. Credit for total fire force available would improve with the addition of firefighters at Number 2 Fire Station.

Although the 4 points above illustrate how insurance grading points might be achieved and that may lead to more attractive insurance rates to some businesses or residents, it is also an indicator of the immediate need for improved service level delivery.

A fire station in East Courtenay will have a positive effect for future development in the area. More than half of the structures built in the City and more than 50% of the population of Courtenay are located east of the Courtenay and Puntledge Rivers. Improved response times and equity of service provide more standardized coverage to the areas both west and east of the rivers. It is feasible that a significant seismic event could compromise both bridge crossings leaving citizens on the east side of the city without fire services. In this type of event it is also likely that mutual aid partners would also be busy dealing with issues in their own jurisdictions. A second fire station will provide the assurance that there will be a response should the access from west Courtenay be compromised.

Over the past 15 to 20 years there has been significant growth east of the Puntledge/Courtenay- River system. A considerable number of large commercial buildings have been built, North Island College and additionally

a new hospital has been approved. These operations employ a significant number of people and are an important economic driver for the city. Improved fire service delivery through a second fire station will provide increased assurance that these jobs are less likely to be interrupted through a fire event over the long term. Fire Departments are a key element of protecting the economic drivers in a community. The timing of construction for a satellite fire hall in East Courtenay should place it in service before the completion of the new hospital which is scheduled to open in late 2017. Having a satellite fire hall in service during the hospital construction phase would be advantageous providing there are trained volunteers assigned to that fire hall. Recommendation 7.1.1 recommends that the fire training ground be constructed without delay. If the training ground were to be started this year, it should allow enough time to have new recruits trained to a reasonable level before a satellite fire hall is ready in 2017. The lead time for the satellite fire hall should be factored in to the decision, however one year should be more than ample time, suggesting that a new fire hall could be started in the first half of 2016 making it ready for occupation in 2017.

12.1 Travel Distances and Response Times

The BC Building Code[4] uses various criteria to establish spatial separation requirements for unsprinklered buildings, which depend on the response time of a fire department. Where the response time, measured according to the parameters in BC Building Code exceeds 10 minutes in 10% or more of the calls to the building location, requirements related to separation between structures and permitted window openings may be affected along with other design restrictions.

If the fire department is unable to meet suggested response time targets then changes to the local building code must be put in place. These changes would include increased spatial separation, no windows on the common sides, fire resistant building materials, building design restrictions etc. These requirements may not align with the Official Community Plan in certain new residential developments.

[4] NOTE: The BC Building Code does not differentiate between career, composite or volunteer fire departments.

Courtenay Fire Department keeps detailed statistics on its reaction time to emergency incidents. From the current fire hall at 650 Cumberland Road, CFD can respond up to Crown Isle Golf Resort within 10 minutes. That is acceptable for residential risks but recommended travel distance to a commercial building or institution should not exceed 5 kilometres with 2.5 kilometers being optimum.

When travel distances are being discussed, actual travel distance must be used. As previously mentioned, having all the fire protection assets located in West Courtenay and with only two river crossings, travel times from the current fire hall will not always be consistent. The probability of both bridges being blocked is an identified concern and can result in delay of critical emergency resources to east Courtenay.

With the addition of an East Courtenay fire hall, CFD would be able to meet the Building Code response target as well as be within the recommended response travel distance for PFPC insured risks.

Response times are measured starting with when the call for service is first answered by 9-1-1 and ending with the fire department arrival at the incident, setup, and ready to operate. It is assumed that the North Island 9-1-1 Fire Dispatch meets industry Standards such as NFPA 1221[5] or the National Academies of Emergency Dispatch. NFPA Standard 1710[6] is not specifically referenced in the Building Code but it is identified in the Building Code's Appendix to provide context for the 90% "reliability" factor. There is no expectation in the building code that any of the fire department performance objectives referenced in the NFPA 1710 standard be met.

Considerable research has examined fire department response times. Alberta has been a leader in this research and a task force was created to offer qualitative input for changes to the buildings codes. The BC Building Code and Alberta Building Code are very similar and much of text is the same, therefore common interpretations on response time issues apply to each provincial code. Through its research, Edmonton Fire Rescue Service has developed a reasonable ten minute response time which is broken down into 5 segments with target times for each segment as follows:

[5] NFPA 1221: Standard of the Installation, Maintenance, and Use of Emergency Services Communications Systems, 2013 Edition

[6] NFPA 1720: Standard for the organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments.

1. 9-1-1 Agent answers the call within 30 seconds.
2. Incident created in Computer Aided Dispatch (CAD) system and down streamed to the appropriate fire department – 75 seconds.
3. Chute or turnout time – 80 - 120 seconds for fires (other incident types vary)
4. Travel time – anywhere within City limits 260 seconds.
5. Set up to operate curbside – 120 seconds.

The City of Courtenay is committed to the volunteer staffing model therefore their options for improving overall response times are limited. Chute time is the time firefighters take to put on their personal protective gear and board the apparatus ready to respond. Fire departments with career staff have an advantage in attaining Chute time targets because they are with the apparatus and usually at the fire hall. Chute time is a large variable when using volunteer staff and will depend on where the firefighters will be coming from when an emergency call is received. Presently, volunteer firefighters living in East Courtenay have to travel to the fire hall to respond anywhere in the service area. Those firefighters would be much more efficient and their Chute times would improve if they were responding to a fire hall on the east side of Courtenay close to where they reside.

Having fire apparatus responding from an East Courtenay fire hall would also reduce travel time and may achieve the 260 second travel time target.

Target times for set up once fire crews have arrived at an incident, can be achieved through training and apparatus equipped and laid out to maximize efficiency. Section 13 of this report talks about performance measuring.

12.2 Improved Values – West vs East Courtenay

Assessed values of improvements within the City of Courtenay are higher in East Courtenay than West by $287,216,534. Residential improved values in East Courtenay make up the largest difference between East and West but the population in East Courtenay is slightly higher and will continue to grow as forecasted in the OCP.

12.3 Call Stats West vs East Courtenay

Year	Total Calls	West Courtenay	East Courtenay
2013	691	353	338
2012	688	345	343

Table 3

Calls for service from CFD are almost equal West and East but as East Courtenay develops, and with the addition of the new hospital and related support facilities, plus increased density and subdivision of large property parcels, calls for fire/rescue service in East Courtenay will also increase.

When comparing calls for service from CFD with other jurisdictions it is important to note as well that CFD does not routinely provide medical aid or "first responder" calls. In 2013, CFD responded to 31 medical aid calls due to the local ambulance service being delayed or because they required assistance with a lift or some other reason. Medical aid calls in many fire departments can be more than 50% of their total calls.

12.0.1 Recommendation

That the City of Courtenay construct a satellite fire hall on the Waters Place property as per Council Resolution of June 11, 2012 with a target in service date of 2017.

12.4 Satellite Fire Hall

Recent examples of new fire halls on Vancouver Island are, Central Saanich, North Saanich, View Royal (under construction) and the recently opened Mill Bay Fire Department satellite fire hall.

The Mill Bay satellite fire hall has 4 bays and the necessary features required to make it an efficient facility for their community.

13.0 PERFORMANCE MEASURING

Performance measuring of a fire department in every aspect of its operation and arriving at a fair conclusion is difficult. There are too many variables and even the judicial system has had difficulty assessing how well a fire department may have performed at an incident. The court uses a system to compare one fire department to another that is similar in many aspects. Councils have been elected by the tax-payers to manage their tax dollars in the most cost-effective manner. Councillors and the District administration have the responsibility to compare the actual performance of the services they provide with the potential performance of their service providers. Fire departments are expensive to establish and expensive to maintain so occasionally a review needs to be performed to ensure the service offered is performing at a reasonable level for the money spent.

A report by NFPA and Urban Institute, Measuring Fire Protection Productivity in Local Government[7] contains useful performance measuring criteria. This report discusses measurements for fire protection productivity analysis and comparison. Productivity is defined as the output delivered relative to the amount of resources available. Output includes consideration of the quality and effectiveness of the service as well as the workload.

But why measure the performance of the fire department? Author Robert Behn[8] points out that "*neither the act of measuring performance nor the resulting data accomplishes anything itself; only when someone uses these measures in some way do they accomplish something".*

The ultimate purpose of performance measuring is to use the data to improve performance. If performance improvement is a goal of the Authority Having Jurisdiction (AHJ) then they can use the data to (1) evaluate, (2) control, (3) budget, (4) motivate, (5) implement and promote, (6) evaluate, (7) learn, and (8) celebrate.

[7] NFPA Fire Analysis and Research Division, Fire Service Performance Measures, Jennifer D. Flynn November, 2009
[8] Robert Behn is the Faculty Chair of Harvard University John F. Kennedy School of Government Performance and a leading researcher on Performance Measuring

Ultimately the Performance measure of a fire department will be judged by the citizens they serve and on rare occasions by the courts. Having a corporate policy that establishes what is acceptable to the AHJ based on industry standards and best practices will establish a benchmark that future performance measuring can be used as a guide to see if CFD is meeting that goal.

Other performance measuring criterion are **effectiveness, efficiency and equity**.

Measuring response times alone do not indicate the effectiveness of the department. A response to a small fire that is not controlled quickly can grow exponentially. Perhaps a better performance measuring tool would be to analyze how effective the fire department is. For example, CFD could say that one of its performance goals is to confine the fire upon arrival to prevent extension beyond the area of origin 85% of the time. The department could analyze data on the percentage of fires it confined to the area of origin and state that as a percentage, 88% of the time or what the actual number is over a period of time such as one year. If the goal is met then it could adjust its goal upward. If the goal is reasonable but not being met then it could use the data to improve the department effectiveness. Effective training is required to ensure firefighters learn the skills and tactics to be effective at a fire but also to maintain those skills through repetitive scenario based training.

Response times of a volunteer fire department are not a fair performance measuring tool. So many variables are present. Where volunteers live relative to the fire hall, traffic corridors, weather and road conditions, traffic volume and sometimes even the incident itself can delay volunteers responding to the fire halls.

Poor maps and ambiguous dispatch information are also factors.

Effectiveness: The effectiveness of CFD cannot be determined without collecting and analyzing data. Many fire departments try to meet a 10 minute response time 90% of the time anywhere in their response area, but that response time target should not apply to CFD with only one fire hall. The 10 minute time is from the time the call is received in the alarm centre until the fire department is curbside and setup ready to attack a fire. From that point on is where the effectiveness can truly be measured. Analyzing the actions taken by the first arriving engine will determine how effective a fire department is. Were the actions taken appropriate for the size and location of the fire? That is where the right training factors in to the equation.

Having standard Operating Guidelines with standardized training ensures standard actions will be employed. The incident commanders must also be trained and tested for their individual performance. Poor incident command decisions at the start can result in

catastrophic property loss or injury and even death. An incident commander who cannot maintain situational awareness should be identified before lives are put at risk at an incident and should be re-assigned to other functions.

One available statistic that is valuable in measuring the performance of CFD is the number and types of injuries. CFD has a good record of keeping its members physically injury free. In a high risk, low frequency job such as firefighting that is a good record to have.

Efficiency: Efficiency is another performance measuring tool. Efficiency is concerned with how well the resources are used in providing the service. Efficiency measures are often simply economic. CFD has good equipment which is well maintained. It is necessary to have some built in redundancy and Engine 13 is a low cost reserve engine that has been used at certain incidents to keep other apparatus intact and ready to respond if a higher risk incident were to occur. The two frontline engines, Engines 11 and 15 plus Ladder 12 ensure CFD has the pumping capacity for some of the larger risks in the community.

It is therefore safe to say that the current investment in facilities and equipment mean CFD is set up to be efficient providing they have the trained and experienced people on hand to use the equipment.

Equity: Equity is concerned with relationship between those who pay and those who benefit. Equity measures look at the fairness in service levels provided and citizen expectation. By using the volunteer staffing model, those who pay for fire protection in Courtenay do receive a good return on their investment (equity). In terms of performance measuring, CFD is offering excellent value. Labour costs to provide this high level of service in Courtenay are low in comparison to other similar communities.

Performance measuring is often used to compare one fire department to a similar one in another community. The courts have used this method to determine what is reasonable by comparing similar communities and consider many factors to arrive at a fair comparison. Comparing a fire department in one community to a fire department in a neighboring community is difficult. There are many factors to consider since there is no one single identifier such as population or call volume. Other factors must be considered. They are:

- Socioeconomic factors such as population,
- Demographics,
- Climatic conditions,
- Community layout and traffic patterns,

- Construction type and age of buildings; and
- Community makeup – residential, commercial, industrial or semi-rural.

Communities change and evolve. A benchmarking partner should be regularly revaluated to see if they are truly similar. A change in community policy can affect performance. For example changes in staffing levels, new services being provided by the fire department, frequency of inspections, sprinkler bylaws, fire prevention programs will be factors in their performance. The fire department should seek similar communities who have the same benchmarks for comparison.

An Alberta Supreme court[9] case involving the Stony Plain Volunteer Fire Department set a precedent that considered the standard of care for volunteer fire departments. The court articulated "*The volunteer Fire Department must perform in a manner which is reasonable for a volunteer Fire Department in like circumstances and with like resources".*

14.0 AUTOMATIC AID/MUTUAL AID

The topic of automatic aid was discussed in the Fire Underwriters report and has also been brought to our attention by several interested parties during our research for this report. It is important to understand the distinct difference between Automatic Aid and Mutual Aid as it pertains to the fire service.

By definition Mutual Aid is a term in organization theory used to signify a voluntary reciprocal exchange of resources and services for mutual benefit. Mutual Aid should be defined in a contractual agreement between two communities and fire departments. The first step in this process is to have authority in Bylaw and Policy for a fire department to enter into a Mutual Aid Agreement.

These agreements should specify what type of aid is required such as equipment, manpower, water supply etc. There should be operating guidelines in place that all mutual aid departments know, understand and use to define expectations, who is in charge, how crews are assigned, personnel accountability, use of common terminology, use of radio channels, when equipment will be released, etc.

Mutual Aid is initiated only at the request of the Incident Commander (IC). This usually occurs after the IC arrives on scene and does the incident initial size up. If the IC determines the resources available to the local department are not sufficient to deal with

[9] Killips's Television Service Ltd. v. Stony Plain (Town) [2000] A.J. No. 145 2000 ABQB 79

the incident, the IC will in most cases request an available mutual aid partner to assist. Courtenay Fire Department currently has ten mutual aid partners.

In contrast, Automatic Aid from neighboring fire department is dispatched automatically by a predetermined set of criteria set by the host fire department. This criteria could be a specific geographic area, large structures (hospital, schools, and large public venues) or events where the planned response exceeds the host fire departments staffing or equipment availability. Automatic aid can be set up so that specific equipment such as water tenders or aerial apparatus can be automatically dispatched as part a pre-fire plan for specific risks.

This criteria is loaded into the Fire Dispatch Computer Aid Dispatch Program (CAD) and when the predetermined conditions are met, the additional resources are automatically dispatched.

Before an automatic aid system is set up, careful consideration must be made when determining the risk versus benefit of the program.

Questions that should be considered are:

- Is the agreement reciprocal between parties?
- Has it been authorized through a bylaw and by policy?
- Do you and/or your partner have the resources to participate and still maintain adequate service in your respective jurisdiction?
- Is there a cost to both parties? What is the cost of response and what is the projected financial impact?
- One of the main goals of automatic aid is to put an engine company on scene in the quickest time. So is the response cost restricted to one engine for one hour?
- Is there a mechanism to convert the response from automatic aid to mutual aid?
- Does your partner have any limitations on response? (availability, distance of response, numbers of staff or apparatus)
- Which party is responsible for costs such as WorkSafeBC or equipment repair/replacement?
- Liability risk for failure to respond?
- Have Joint and Several liability risks been considered?

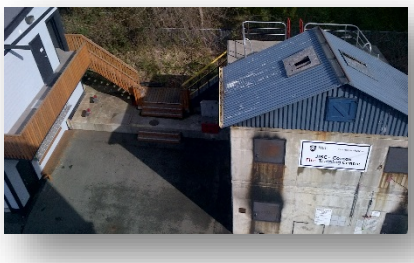
One of the potential partners for Courtenay to initiate an Automatic Aid Agreement with is the Town of Comox. The half-way point between Comox Fire Hall and Courtenay Number 1 Fire Hall along the Lerwick Rd. corridor is just north of Malahat Drive. This point is approximately 4.3 km from each fire hall. If a second fire hall is constructed at

Waters Place, this halfway point would move to approximately Blue Jay Pl. The distance between these two points is approximately 1.4 km which is connected directly by Lerwick Rd. This area is primarily residential and although some might propose there might a benefit from an automatic aid response, it would be debatable, given initial volunteer firefighter response time to either fire hall or the traffic conditions experienced en-route which engine would arrive first on scene.

It may be that the biggest opportunity to consider for automatic aid might be to respond to certain large buildings such as the new hospital, the college or some of the bigger commercial building structures in both communities when there is a **confirmed** fire event. This in no way would compromise the Mutual aid agreements already in place and would assist both communities to deal with incidents requiring a large number of responders.

15.0 COMOX FIRE TRAINING CENTRE

The Comox Fire Training Centre was visited on March 31, 2014 by the consultants to see and hear firsthand about the features and programs of this facility and the training being offered. Fire Chief Gord Schreiner and the team at Comox Fire Department have done an excellent job in building this training centre and delivering training to over four thousand firefighters. The Comox Fire Hall and Training Centre is on a .96 acre site (.388 hectare). It is very compact but has many props and features for technical firefighting training. The centre provides accredited training for most of the courses offered through the Justice Institute of BC, Fire and Safety Division that allow firefighters to attain the NFPA 1001 Standard. The program delivered by the Comox Fire Training Centre has earned a good reputation throughout Canada.



Due to the compactness of the facility however, there is limited opportunity to have multiple engine companies operating at a simulated structure fire at the same time.

The proposed Courtenay Fire Training Ground would complement the Comox Fire Training

Centre by offering other types of training such as driver training, scenarios using multiple engine or ladder companies and a focus on officer training not offered at Comox. The proposed Courtenay Fire Training Ground would also be able to offer variable confined space rescue scenarios which are an important component of the NFPA Standard. Another advantage is with more space is some driver training at the Courtenay training ground could be offered. Slow speed maneuvering, backing or air brake courses would be possible.

With respect to training of its firefighters, Comox Fire Department has a distinct advantage over most fire departments due to the fact it has developed such a good training facility. It is easy to understand how it has evolved from training the Comox firefighters to being a well-respected training resource for the fire service in general.

Comox firefighters are well known for their high level of training and they have been very generous at sharing their training experience with other departments. Having this training centre at their fire hall has enabled them to utilize it for their weekly training and ongoing skills maintenance.

A Courtenay Fire Training Ground would be a complementary regional asset in providing advanced scenario based training plus other specialized training in conjunction with the firefighter training programs provided by Comox.

You can never know enough about a job that can kill you!

Nick Brunacini, Battalion Chief, Phoenix Fire Department

16.0 PHASING OPTIONS

One of the deliverables of this report was to specifically suggest phasing options as to when the training ground and satellite fire hall should be constructed. In June of 2012 City of Courtenay Council passed a resolution to *"proceed with the design and construction of the East Courtenay Fire Hall/Training Centre".* In November of that year a resolution to create a Select Committee of Council was passed to review the project and to provide input to Council on the overall project. It is hoped this report will be the vehicle that will enable the Select Committee and Council to move the project forward and enhance public safety in Courtenay.

Upon review of the project we have made 4 recommendations two of which are specific to the construction of the Courtenay Fire Training Ground and East Courtenay Fire Hall. The remaining two recommendations are administrative in nature.

Recommendation 7.1.1 recommends that the Courtenay Fire Training Ground be designed and built without further delay. CFD has set an aggressive training schedule for new recruits and has skills maintenance requirements for trained firefighters. As noted in Table 2, 61% of the available volunteer firefighter force has less than five years or less of experience. Turnover of volunteer firefighters in CFD is not exceptionally high or unique to Courtenay, but it is a reality. As part of the department succession plan a training ground is highly recommended to make CFD sustainable. Training of new firefighters must occur before a new fire hall comes on stream in East Courtenay.

As discussed in Section 12 of this report there four compelling reasons plus many other practical reasons why a satellite fire hall in East Courtenay is required.

With the new development that has already occurred or is scheduled for East Courtenay more trained volunteer firefighters are required. CFD has a two year training lead time for new recruits. We have suggested that an East Courtenay Fire Hall should be open for service in early 2017. The lead time for training new recruits is 18 – 24 months. Lead time for planning and construction of the training ground must be taken into consideration so should construction start in the fall of 2014 and it may take 8-9 months to build, the target occupancy date is late spring 2015. The fire hall project could follow in 2016, with a target occupancy and in-service date with trained volunteer staff of 2017.

The logical phasing therefore for the project should be, start the training ground without delay and plan to have the new fire hall and equipment in service in early 2017.

Phasing Option 1 – CFD Fire Training Ground

Proceed with the design and construction of the Courtenay Fire Training Ground without delay in 2014 to be ready for service in early 2015.

Phasing Option 2 – East Courtenay Fire Hall

The East Courtenay Fire Hall planning to start in 2015 and built in 2016 ready for service for early 2017.

17.0 TAX IMPLICATIONS

How will the proposed fire training ground and new fire hall impact the taxpayer is a question on the minds of everyone.

In British Columbia there are nine property classifications used in calculating municipal taxes. For this project, the estimated rates per $1,000 of assessed value for each are as follows:

01 Residential -	0.0832
02 Utilities -	0.5837
03 Supportive Housing -	0.0832
04 Major Industry -	0.3247
05 Light Industry -	0.3247
06 Business/Other -	0.2331
07 Managed Forest Land -	N/A
08 Rec/Non-Profit -	0.0832
09 Farm -	0.0832

Based on BCAA assessed values, the average residential property has a value of $275,625 in 2014. Using the rate of $.0832 per thousand dollars of assessed value, the impact of constructing a $5.7 million training grounds/satellite fire hall for the average residential property is estimated to be $22.93 per year, or $1.91 per month. Property Class 06 Business /Other would pay $0.2331/M of assessed value.

These property owners especially in East Courtenay may realize an insurance premium reduction that could partially offset the slight increase in property tax. When analyzing

the taxation rates, it is clear that the impact on the taxpayer is small but the investment in public safety is significant.

18.0 CONCLUSIONS

Courtenay Volunteer Fire Department is well-managed and provides excellent service and value to the citizens it serves.

Number 1 Fire Station is well equipped and it is apparent that the care, and maintenance of the facility and apparatus, is a high priority within the department. The training standard for firefighters has been set at the NFPA Standard 1001, Firefighter Level II and it is expected by the department this level will be achieved within 24 months of a recruit becoming a member. This standard is the appropriate minimum for Courtenay Firefighters when considering the risk factors that exist in the city.

The training facilities at number one fire station are not complete enough to provide the infrastructure required to train firefighters to the standard set by the department. Although the hose tower is used for ladder and high angle rescue training, the total fire hall site is not large enough to accommodate props and multi-engine scenarios. Additionally, a training ground is more suited to be placed in area zoned for industrial use than the current commercial/downtown setting directly adjacent to number one fire station.

The ability to provide scenario based training in a safe and controlled environment is key to developing the skills and confidence required for firefighters to operate effectively in a real emergency situation. A good example in the Comox Valley of scenario based training can be found at the Canadian Forces Base Comox which is the home of 442 Transport and Rescue Squadron. Search and Rescue Technicians are trained to meet many of the challenges they will be faced with during real rescue operations using scenario based training. The first time a SAR recruit parachuted from a fixed wing aircraft or rappelled from a helicopter was accomplished during a scenario based training event where at least some of the safety factors can be controlled. Both the SAR Technicians and firefighters work in environments that at times can be very unforgiving. The best way to mitigate the risk factors encountered regularly in these occupations is through training. Scenario based training is the only place where the student can put together classroom and physical skills learning in a controlled environment where the firefighter can be coached,

directed and evaluated before he or she is expected to perform duties at a real emergency event.

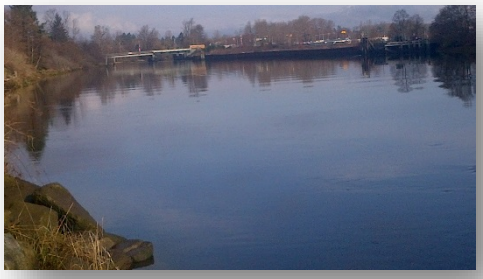
As stated earlier, training is one of the key factors in the retention of volunteer firefighters. A robust training system keeps interest up and ensures they have the skills necessary to provide service to the public. Good training builds pride within the Fire Department and confidence with the citizens they serve.

We believe that by building your own training ground, you will have the ability to control your own destiny in matters pertaining to firefighter training for the City of Courtenay.

Variables going forward such as costs, scheduling, acceptable risk management policy and unique training opportunities will be managed in-house rather than prescribed by an outside agency. Additionally when using an outside agency there is no guarantee that those facilities will be available over the long term and that could translate into building your own facility at a later date and experiencing significantly increased costs. Training and skills maintenance are key to firefighter safety and collectively they mitigate the negative effects of fire in your community.

We believe the City of Courtenay will be well served by constructing a new training ground facility and that the Waters Place site would be an excellent choice for this type of facility.

There is strong evidence to support that a second fire station east of the Puntledge/Courtenay River System is an appropriate investment for the City of Courtenay. The recent growth in this area has changed the demographic of the city. More than 50% of the population and much more of the assessed value of properties is currently situated in the east Courtenay area. Increased residential and commercial development is indicated for this area in the immediate future and the new hospital will be constructed in East Courtenay adjacent to North Island College. The commercial



properties located in East Courtenay not only exhibit a considerable financial investment, they are also a significant economic driver for the area.

Courtenay is geographically divided East and West by the Puntledge Courtenay River System. Access within the city limits is provided by the 5th and 17th street bridges. If for any reason both these access points were closed off at the same time, a significant delay for fire services east of the river system is likely to occur. This could be the case should a significant seismic event occur or it could be as simple as maintenance being carried out at one crossing and a motor vehicle accident takes place at the other.

We believe these risks can be managed better by building a second fire station which would provide an equitable level of response to the citizens living east of the Courtenay/Puntledge Rivers.

The investment in additional public safety capacity more than justifies the low increase in property tax.

It was our privilege to review the reports and other information we gathered pertaining to a second fire station and a training ground facility for the City of Courtenay. It was a pleasure to work with Chief Bardonnex, Deputy Chief MacDonald, Deputy CAO Tillie Manthey and other senior staff and to report our findings to the East Courtenay Fire Hall/Training Ground Project Review Committee.

Respectfully submitted,

Rob Owens, CFO

Glen Sanders

Glossary

AHJ -	Authority Having Jurisdiction
CAD -	Computer Aided Dispatch
CFD -	Courtenay Fire Department
CoC -	City of Courtenay
EVT -	Emergency Vehicle Technician
Fire Pro -	Fire Pro; Computerized Fire Department Record Management System
FSA -	Fire Services Act
FUS -	Fire Underwriters Survey
FWC -	FireWise Consulting Ltd.
GPM -	Gallons per minute
I/C -	Incident Commander
IFSTA -	International Fire Service Training Association
LAFC –	Local Assistant to the Fire Commissioner
MinFor -	Ministry of Forests, Lands and Natural Resource Operations
MVI -	Motor Vehicle Incident
NPFA -	National Fire Protection Association
OCP -	Official Community Plan
OFC -	Office of the Fire Commissioner
OG –	Operational Guideline
OH&S -	Occupational Health and Safety
PEP –	Emergency Management BC (formerly Provincial Emergency Program)
PSI -	Pounds per square inch
SAR -	Search and Rescue
SCBA -	Self-Contained Breathing Apparatus
TCP -	Traffic Control Person
TO -	Training Officer
ULC -	Underwriters Laboratory Canada
WCB -	WorkSafeBC