



# West Kelowna Fire Rescue

## Fire Service Needs for Complex Buildings

Prepared by Jason Brolund, Fire Chief  
Originally Prepared December, 2023  
Revised and Updated October 21, 2025



### Human Resources and Deployment Analysis

The purpose of this analysis is to focus on the **staffing needs and deployment of resources** as West Kelowna Fire Rescue (WKFR) prepares to respond to complex buildings within their fire protection area. This analysis supports and forms a part of the West Kelowna Fire Service Needs for Complex Buildings plan.

*Please note that costs outlined in this report are preliminary and will require further revision and refinement in cooperation with the finance department. Costs are outlined to provide an estimation of the order of magnitude of recommendations and options. Final approval of exact costs will need to be provided by Council as a part of the annual budget process.*

### Introduction

Complex buildings present a unique threat to the fire service and present challenges to operational capabilities of a modern fire department. Timely deployment of firefighting resources and personnel is the primary line of defence when a fire occurs. The effectiveness of the fire department response (or consequences of the fire) will be largely influenced by the number of firefighters deployed and their arrival time.

Understanding the required resources is critical. The number of firefighters needed to combat a fire safely and effectively in a high building will be larger than other types of structural fires.

Regardless of the size of the burning structure, firefighters identify four priorities: life safety of occupants and firefighters, confinement of the fire, property conservation, and reduction of environmental impact. Interdependent and coordinated activities of all firefighting personnel are required to meet the priority objectives.

### Best Practices

Fire response to upper floors in large buildings is a complex operation, involving multiple personnel operating over many floors. While the exact sequence of operations may vary from one fire department to another and even from one fire to another depending upon the exact nature of the event, the following narrative (*based on the US National Institute of Standards and Technology Technical Note #1797 – “A Brief Overview of High Rise Fire Operations”<sup>1</sup>*) describes the general sequence of activities during a fire in a high building, as an illustrative example.

<sup>1</sup> [Report on High-Rise Fireground Field Experiments \(nist.gov\)](https://www.nist.gov/research-publications/report-high-rise-fireground-field-experiments)

### The First Arriving Fire Crews (2 engines):

- The first fire engine positions such that it can establish an uninterrupted water supply to critical building systems, including the standpipe and sprinkler system. The driver operates the fire engine pump as the remaining crew members enter the building.
- The first arriving officer establishes command (Incident Command) and conducts initial size up by checking the alarm panel and consulting with building management. One firefighter or officer is assigned to the lobby to establish Lobby Control.
- Remaining firefighters and officers ascend the stairway to an area two floors below the fire via stairs when the elevator is unsafe for use or by elevator when the elevator is determined to be safe for use by firefighters. This crew sets up a staging area to hold firefighters preparing to fight the fire or to conduct search and rescue.
- Crewmembers proceed to the next floor up (one floor below the fire). Upon arrival at the floor below the fire, one crew enters for the purpose of viewing the general floor layout in preparation for entering the fire floor. This crew also does a quick check for fire extension and connects a hose to the standpipe on that floor.
- Prior to being charged with water, a hose line (200 ft (61m) of 2 ½ inch hose) is stretched from the standpipe on the floor below the fire to the stairwell on the floor above the fire. It is then looped back in the stairwell in preparation for entry to the fire floor.
- An Initial Rapid Intervention Team (RIT) is assembled on the staging floor prior to crews entering the fire floor. This crew, mandated by WorkSafe BC, is designated prior to anyone entering an atmosphere that is immediately dangerous to life or health (IDLH). A full and sustained Rapid Intervention Team (RIT) is assembled as soon as sufficient personnel arrive on scene to do so.
- Once fully charged with water, the hose line is advanced through the doorway into the fire floor hallway. Ceiling tiles (or ceiling if no tiles present) are pulled open to check for fire extension as the crew advances down the hallway toward the initial fire area. Checking the ceiling ensures that the crew will not become trapped due to a hidden fire in the overhead space.
- If fire extension has not progressed beyond the initial fire compartment, entry is forced into the fire compartment area.
- The hose line is extended into the fire compartment area and operated to extinguish the fire.

### As Other Fire Crews Arrive:

- Upon arrival, a command officer (Chief Officer) receives command transferred from the initial Incident Commander (IC).
- Upon arrival, a second command officer is assigned as a Division supervisor on the fire floor and supervises all operations on that floor.
- After leaving a crew member in the lobby to place a high-pressure mechanical fan in the stairwell to keep the stairwell free of smoke, a crew ascends to the fire floor to begin a search for any victims.
- All arriving crews are directed to the staging area two floors below the fire floor, except for later arriving crews that may first report to Base (staging outside the building) pending assignment.
- A second hose line, also 200 ft (61 m) of 2 ½ inch hose, is advanced from the standpipe on the fire floor to the fire area and is operated to extinguish the fire.
- One company of firefighters is assigned to Stairwell (or Elevator) Support to transport necessary supplies (Self Contained Breathing Apparatus (SCBA) air cylinders, water for hydrating firefighters, search ropes, etc.) to the staging floor for crews working in the building.

- A rehabilitation area is established two floors below the fire adjacent to the staging area to conduct a physical assessment of firefighters who have completed a unit of work (commonly the consumption of one air bottle by a firefighter or a predetermined time).
- A crew is assigned to check for fire extension on the floor above the fire with a 2 ½ inch hose line. A second hose line supplied by the floor above the fire standpipe is also deployed to that area.
- A crew is also assigned to conduct search and rescue operations on the floor above the fire.
- Crews are also assigned to upper floors (above the floor above the fire) to search the floors and both stairwells.
- Stairwells are ventilated using positive pressure ventilation (PPV), which includes opening a hatch at the top of the stairwell after the fire is reported to be out.

Later arriving resources are assigned to:

- Staging Officer
- Upper Division (upper floors)
- Safety Officer
- Liaison Officer (EOC)
- Operations Officer
- Public Information / Media
- Logistics

As shown by the assignments, the first tactical priorities are extinguishing, or at least controlling the fire and conducting a primary search and rescue in the immediate fire area; these tasks must include a RIT team before suppression or search tasks can proceed. Successful fire control stops forward progress of the fire and protects crews conducting search and rescue activities, whereas extinguishment dramatically reduces the magnitude of the hazard.

Salvage, overhaul, and secondary search activities will follow and require the assignment of additional resources.

### **NFPA 1710**

The National Fire Protection Association (NFPA) is a global self-funded non-profit organization, established in 1896, devoted to eliminating death, injury, property, and economic loss due to fire, electrical and related hazards. NFPA delivers information and knowledge through more than 300 consensus codes and standards, research, training, education, outreach, and advocacy. Their stated mission is to help save lives and reduce loss with information, knowledge, and passion.

NFPA Technical Committees and Panels serve as the principal consensus bodies responsible for developing and updating all NFPA codes and standards. Committees and Panels are appointed and typically consist of no more than 30 voting members representing a balance of interests. Appointment to a Technical Committee is based on such factors as technical expertise, professional standing, commitment to public safety, and the ability to bring to the table the point of view of a category of interested people or groups. Each Technical Committee is constituted to contain a balance of affected interests, with no more than one-third of the Committee from the same interest category. The Committee must reach a consensus in order to take action on an item.

Based partially on the operations detailed above, the National Fire Protection Association developed NFPA Standard 1710 – *“Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments”*.

The Technical Committee that developed the current version of NFPA 1710 consists of Fire Chiefs, Union Representatives, Fire Training Schools, Insurance Industry, and major fire departments including New York and Los Angeles, Boston and Montreal.

This standard broadly specifies requirements for effective and efficient organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by career fire departments to protect citizens and the safety and health of fire department employees. A career fire department is defined as using full-time career staff for at least 50% of the initial assignment to a fire. West Kelowna Fire Rescue meets this definition (2 career engines #31, #32 and a Chief Officer plus 2 Paid-on-Call Engines).

Amongst many other things, NFPA Standard 1710 (5.2.4.4.1) specifies two components relating to the response to fires:

1. the number of on-duty fire suppression personnel sufficient to carry out the necessary firefighting operations given expected firefighting conditions in various hazard level occupancies.
2. the time in which these fire suppression personnel must arrive at an emergency.

For this analysis, a high building is defined as a high-hazard occupancy and that is where this document will focus.

	NFPA Personnel
1 Establishment of a stationary incident command post outside the hazard area for overall coordination and direction of the initial full alarm assignment with a minimum of <b>one officer</b> with <b>an aide</b> dedicated to these task- and all operations are to be conducted in compliance with the	2
2 Establishment of an uninterrupted water supply to the building standpipe/sprinkler connection sufficient to support fire attack operations maintained by <b>an operator</b> and if the building is equipped with a fire pump, <b>one additional member</b> with a radio to be sent to the fire pump	2
3 Establishment of an effective water flow application rate on the fire floor at a minimum of 500 gpm (1892 L/m) from <b>two handlines</b> , each operated by a minimum of <b>two members</b> to safely and effectively handle the line.	4
4 Establishment of an effective water flow application rate on the floor above the fire floor at a minimum of 250 gpm (946 L/m) from at least <b>one handline</b> , with each deployed handline operated by a minimum of <b>two members</b> to safely and effectively handle the line.	2
5 At a minimum, an initial rapid intervention crew (IRIC) assembled from the initial attack crew and, as the initial alarm response arrives, a <b>full and sustained rapid intervention crew</b> (RIC) established.	4
6 Provision of <b>two or more search-and-rescue teams consisting of a minimum of two members each</b> .	4
7 Provision of <b>one officer, with an aide</b> , dedicated to establishing an oversight at or near the entry point on the fire floor(s).	2
8 Provision of <b>one officer, with an aide</b> , dedicated to establishing an oversight at or near the point of entry on the floor above the fire.	2
9 Provision of <b>two or more evacuation management teams</b> to assist and direct building occupants with evacuation or sheltering actions, with <b>each team consisting of a minimum of two members</b> .	4
# Provision of <b>one or more members</b> to account for and manage elevator operations.	1
# Provision of a minimum of <b>one trained incident safety officer</b>	1
# Provision of a minimum of <b>one officer</b> two floors below the fire floor to manage the interior	1
# Provision of a minimum of <b>two members</b> to manage member rehabilitation and at least one of the members to be trained to the ALS level.	2
# Provision of an <b>officer and a minimum of three members</b> to conduct vertical ventilation	4
# Provision of a minimum of <b>one officer</b> to manage the building lobby operations.	1
# Provision of a minimum of <b>two members</b> to transport equipment to a location below the fire floor.	2
# Provision of <b>one officer</b> to manage external base operations.	1
The establishment of an initial medical care component consisting of a minimum of two crews with a minimum of two members each with one member trained to the ALS level capable of providing immediate on-scene emergency medical support, and transport that provides rapid access to civilians or members potentially needing medical treatment.	4
# Community Fire Response Coverage (Subsequent Incident)	0
<b>Total</b>	<b>43</b>

NFPA states that the first fire engine must arrive on scene within 5:20 of dispatch 90% of the time. NFPA requires that the full alarm assignment (all engines and personnel) be on scene within 11:30 from dispatch 90% of the time.

### NFPA 1710 Analysis

NFPA 1710 has been put forward as a “one-size fits all benchmark” that must be complied with as written in the standard. While its development is based in consensus of a wide range of parties,

at best it serves as an aspirational standard that can be used as a benchmark for the overall improvement of fire services across North America.

Across North America, it is understood some may never fully achieve compliance with this standard. Most recently in 2022, the Calgary Fire Department (one of the largest in Canada) investigated meeting NFPA as a performance standard. They concluded that while they could use NFPA 1710 as an aspirational guiding document, it is not feasible as a response standard. They found that over 15-20 years they would have to double the size of their fire service (adding more than 1,200 firefighters) at an operating cost exceeding \$200 million annually to meet the standard. Their research did not find any comparable municipalities that met NFPA 1710 targets in Canada. According to their most recent published annual report (2022), Toronto failed to meet the time requirements of the NFPA 1710 standard.

The NFPA 2021 Needs Assessment of the US Fire Service<sup>2</sup> found that most US communities with populations less than 500,000 do not meet the 1710 standard. They also found that at least 44% of the communities with populations greater than 500,000 do not meet the standard.

However, the same study found that within the US, communities the size of West Kelowna/WFN (25,000-49,000) have on average 13.9 on-duty career firefighters. This is higher than the 8 on-duty career firefighters currently staffed in WKFR.

In our jurisdiction, NFPA 1710 is a non-mandatory standard, that is not codified in any legislation. Whole-scale implementation of NFPA 1710 response time and staffing standards would be extremely costly and therefore unrealistic for a community our size. Therefore, the standard best serves as a resource for developing plans and strategies for future public safety.

NFPA 1710 calls for innovation when it comes to staffing models to meet the standard, opening the door for communities such as ours to use the standard as a benchmark and identify opportunities to improve service delivery.

### **Alternate Best Practices**

The Fire Protection Handbook<sup>3</sup> is a longstanding resource guide for the fire service. The Handbook (also developed by NFPA) identifies initial attack response capabilities for low, medium, and high hazard occupancies. It defines high-hazard occupancies as schools, hospitals, nursing homes, explosive plants, refineries, high-rise buildings and other high life hazard or large fire potential occupancies.

The handbook describes the following operational response capability for high-hazard occupancies:

*at least 4 pumpers, 2 ladder trucks (or combination apparatus with equivalent capabilities), 2 chief officers and other specialized apparatus as may be needed to cope with the combustible involved; not less than 24 firefighters and 2 chief officers plus a safety officer and a rapid intervention team. (29 total)*

---

<sup>2</sup> [Executive Summary as Part of the Fifth Needs Assessment of the US Fire Service \(nfpa.org\)](#)

<sup>3</sup> Fire Protection Handbook, 20th Edition, Copyright ©2008 NFPA

## **Comparable Communities**

20 British Columbia communities, between the sizes of 10,000 and 100,000 population were surveyed by WKFR to provide an analysis of other local jurisdictions and their staffing, training, preparation and response to complex buildings. Vancouver, Surrey, Richmond and Kelowna were also included to capture a sense of a more evolved, larger community/fire service.

Best practices were also gathered through the request of operational guidelines and training materials from these communities.

Some, but not all responded to our request, and we found the following:

- Some identified they perceived they were deficient in their staffing, training, and policy to respond to complex buildings in their communities. More than one was very candid that their programs were out of date and insufficient, but that they intended to improve.
- Many were interested by our work and asked for us to share the outcome to help them develop their program and be better prepared.
- Larger comparators in the lower mainland had numerous complex buildings and were more prepared with evolved staffing and training programs. (North Vancouver, Surrey, Richmond and Vancouver)
- Some directly compare (with respect to size of department) and already have high rises in place.
  - Most are near larger metropolitan areas with a very large mutual aid response capability from their neighbours (Port Moody, North Van District, White Rock).
  - These departments have integrated the procedures from nearby mutual aid departments into their programs (White Rock → Surrey)
  - Some are not clear on how they would handle an escalating incident in a complex building beyond their staffed capacity (Penticton, Vernon).
- Some have banded together as a region to ensure an adequate response, often with one or more large or very large partners (New Westminster, Port Moody, Port Coquitlam, Coquitlam, Burnaby).
- Training materials and operational guidelines from our nearest regional partner (Kelowna) will have the most relevance as we are likely to respond together. They will require modification to meet West Kelowna staffing and deployment.

The provision of operational guidelines and training materials from some communities who shared them will continue to be reviewed and incorporated into the development of WKFR policy and training.

## **WKFR Deployment Model**

To meet the presence of high buildings within our jurisdiction, WKFR proposes a capability-based approach to assemble and deploy an effective firefighting force at the scene of a high building emergency.

Several assumptions are made to support the proposed deployment model:

- All WKFR engines and on-duty staff are available (not already engaged on other calls)
- Paid-On-Call staff respond when requested and turnout an engine from each station with 4 staff (including a qualified driver/pump operator AND officer) PLUS 2 additional staff in a secondary vehicle.

- Off duty Safety Officer(s) and Training Officer respond when requested
- Mutual Aid Support is trained and available from neighbouring departments and responds when requested.
- An off-duty call-back crew of 4 career firefighters responds when requested.
- RCMP and BCEHS can provide the requested resources.
- Support from other agencies is available (EOC, Bylaw, Public Works, ESS etc)

The largest assumption made is that all high buildings will be built to the latest provision of the BC Building Code, including non-combustible construction, compartmentalization, full fire sprinkling and a modern alarm and communication system. Inclusion of additional requirements as legislated in the West Kelowna Fire Prevention Bylaw (such as equipment rooms) is also assumed. These factors will increase the level of safety and effectiveness of firefighters in this event.

The minimum response to an incident in a high building in West Kelowna will consist of the following: *(note: a “company” consists of a group of 4 firefighters)*

5.5 West Kelowna Companies	22
3 Safety/Training Officers (Off Duty call-back)	3
2 Chief Officers (on-call)	2
2 Mutual Aid Companies	8
3 BCEHS Ambulances	6
Off Duty Career Company (coverage)	4
<b>Total</b>	<b>45</b>

1 West Kelowna Company consisting of 4 off duty staff in a spare fire apparatus will be called back to provide coverage for subsequent incidents that may occur in the community. Any further support for such incidents would need to be supplied via mutual aid.

This response encompasses 45 firefighting staff.

The response time for the first engine will vary depending on travel distance from the nearest fire station.

The response time for the full alarm assignment will also vary depending on travel distance, however it is anticipated to fall outside of the recommendations contained within the NFPA Standard due to lengthy response times of mutual aid and off duty staff. This will need to be accounted for in development of standard operating procedures for these types of events and may result in delay of completion of all required tasks on the fireground.

### **Resource Allocation**

WKFR resource allocation is shown below against the NFPA 1710 Standard. In some areas, the number of personell required is decreased to meet local operational procedures (eg: when an “aide” is specified by NFPA it is not included in the WKFR model). Emergency Medical Services are provided by the BC Ambulance Service within the province. The RCMP and local bylaw will play a key role in the management of evacuees. In some areas, the number of personnel is increased to protect the safety of firefighters (Rapid Intervention Team).

The NFPA standard is silent on the provision of ongoing coverage of the community to mitigate a subsequent emergency. The WKFR resource allocation takes ongoing protection of the community into consideration by including a dedicated engine company for this task.

	NFPA Personnel	WKFR Personnel	Mutual Aid	BCEHS	WKFR Analysis Notes
1 Establishment of a stationary incident command post outside the hazard area for overall coordination and direction of the initial full alarm assignment with a minimum of <b>one officer</b> with <b>an aide</b> dedicated to these tasks and all operations are to be conducted in compliance with the	2	1			* An aide for the I/C is not typically provided
2 Establishment of an uninterrupted water supply to the building standpipe/sprinkler connection sufficient to support fire attack operations maintained by <b>an operator</b> and if the building is equipped with a fire pump, <b>one additional member</b> with a radio to be sent to the fire pump	2	1	1		* A member of the second arriving mutual aid company monitors the fire pump
3 Establishment of an effective water flow application rate on the fire floor at a minimum of 500 gpm (1892 L/m) from <b>two handlines, each operated by a minimum of two members</b> to safely and effectively handle the line.	4	4			
4 Establishment of an effective water flow application rate on the floor above the fire floor at a minimum of 250 gpm (946 L/m) from at least <b>one handline, with each deployed handline operated by a minimum of two members</b> to safely and effectively handle the line.	2	2			
5 At a minimum, an initial rapid intervention crew (IRIC) assembled from the initial attack crew and, as the initial alarm response arrives, a <b>full and sustained rapid intervention crew (RIC)</b> established.	4	2	3		* Initial RIT team of 2, meeting WorkSafe reqs, supplemented by mutual aid company on arrival
6 Provision of <b>two or more search-and-rescue teams consisting of a minimum of two members each.</b>	4	4			
7 Provision of <b>one officer, with an aide</b> , dedicated to establishing an oversight at or near the entry point on the fire floor(s).	2	1			* An aide for a forward deployed officer is not typically provided
8 Provision of <b>one officer, with an aide</b> , dedicated to establishing an oversight at or near the point of entry on the floor above the fire.	2	1			* An aide for a forward deployed officer is not typically provided
9 Provision of <b>two or more evacuation management teams</b> to assist and direct building occupants with evacuation or sheltering actions, with <b>each team consisting of a minimum of two members.</b>	4	4			
# Provision of <b>one or more members</b> to account for and manage elevator operations.	1	1			
# Provision of a minimum of <b>one trained incident safety officer</b>	1	1			
# Provision of a minimum of <b>one officer</b> two floors below the fire floor to manage the interior	1	1			
# Provision of a minimum of <b>two members</b> to manage member rehabilitation and at least one of the members to be trained to the ALS level.	2	1		2	* 2 paramedics from BCEHS as per Rehab Protocol
# Provision of an <b>officer and a minimum of three members</b> to conduct vertical ventilation	4		4		* First Arriving Mutual Aid Company
# Provision of a minimum of <b>one officer</b> to manage the building lobby operations.	1	0			* Managed by I/C + RCMP Support + WKFR Admin/Logistics
# Provision of a minimum of <b>two members</b> to transport equipment to a location below the fire floor.	2	2			
# Provision of <b>one officer</b> to manage external base operations.	1	1			
The establishment of an initial medical care component consisting of a minimum of two crews with a minimum of two members each with one member trained to the ALS level capable of providing immediate on-scene emergency medical support, and transport that provides rapid access to civilians or members potentially needing medical treatment.	4			4	* Provided by BCEHS crews
# Community Fire Response Coverage (Subsequent Incident)	0	4			* Provided by WKFR off-duty callback crew (P31)
<b>Total</b>	<b>43</b>	<b>31</b>	<b>8</b>	<b>6</b>	
			<b>Total</b>	<b>45</b>	

NFPA does not consider the number of non-firefighting staff required to support an incident in a high building. The WKFR deployment plan takes the following into consideration:

<b>Other Required Personnel (not specified by NFPA)</b>	
RCMP Occupant Accountability / Evacuee Management / Security	8
Bylaw/WFN Law Enforcement Traffic Control/Security	4
EOC Field Liaison Officer (Regional Fire Chief)	1
EOC Activation (Pub Info/ESS/Logistics) - Regional City Staff	15
Utilities (Water, Drainage, Power, Gas)	4
ESS Reception Centre - ESS Volunteers	15
Salvation Army (Food/Refreshments/Evacuee Support) - Volunteers	4
BC ALERT (Animal Evacuee Support) - Volunteers	5
WKFR Admin Staff (Accountability/Logistics Support)	2
WKFR Chaplain	1
<b>Total</b>	<b>59</b>

## **Staffing Needs & Solutions**

To meet the requirements outlined above and ensure that the assumptions in the plan are met, the following is recommended:

<b>Need No.</b>	<b>Need Title</b>	<b>Need Description</b>
1	3 <sup>rd</sup> On-Duty Fire Company	4 additional firefighters on-duty 24/7
2	Assistant Fire Chief	Support administrative, planning, training, and response requirements.
3	Rostering of Staff	Ensure response during off-duty hours, when required
3a	Training & Safety Officers	On-call pay evenings, weekends, stat holidays
3b	Second Chief Officer	On-call pay evenings, weekends, stat holidays
3c	Paid-On-Call Firefighters	On-call pay during times of low historical turnout
4	Recruit/Retain POC Firefighters	Achieve max strength of 70 (35 per station)
5	Administrative Support	Support for Scheduling, Rostering (round out current .6FTE to full time)

The needs identified will serve to better prepare the fire service to respond to incidents in high buildings. However, each need will also serve to better prepare the fire service overall to respond to an ever-increasing range and frequency of incidents.

<b>Need No.</b>	<b>Need Title</b>	<b>Need Description</b>
1	3 <sup>rd</sup> On-Duty Fire Company	2 additional firefighters on-duty 24/7

The WKFR resource allocation plan specifies the response of 5 WKFR companies, supported by additional mutual aid companies (2) to provide the required number of firefighters to the event. Currently, WKFR is notionally only able to provide 4 companies – necessitating the need for one to be added. The primary role of this company will be to perform rescue of occupants – so a timely arrival is critical. To ensure a more rapid response time – it is recommended this company be on duty 24/7 and consist of paid, professional firefighters.

<b>Current</b>			
Station #31 (Westbank)	1 company (engine)	24/7 Career Firefighters	22 FTE
Station #32 (Lakeview)	1 company (engine)	24/7 Career Firefighters	22 FTE
Station #33 (Rose Valley)	1 company (engine)	Paid-on-Call Firefighters	35 (target)
Station #34 (Glenrosa)	1 company (engine)	Paid-on-Call Firefighters	35 (target)
<b>Proposed</b>			
Station #31 (Westbank)	1 ADDITIONAL company (rescue/ladder) of 2 F/F	24/7 Career Firefighters	10 FTE
Station #33 or #34	½ ADDITIONAL company (2 members from either station)	Paid-on-Call Firefighters	

In addition to increasing the level of protection for complex buildings, the 3<sup>rd</sup> company will also provide significant benefits, increased productivity and the potential for cost offsets and savings to WKFR. This includes:

- Increased number of Fire Inspections (meet frequency)

- Decreased call back costs (overtime reduction)
- Ability to perform more on-duty training
- Increased public education programming
- Achieve Superior Tender Shuttle accreditation (decreased insurance costs)
- Increased response capability for other major events and/or mutual aid

Over time, a further 2 firefighters on duty 24/7 will likely be required in future years as development continues and risk increases.

Need No.	Need Title	Need Description
2	Assistant Fire Chief	Support administrative, planning, training, and response requirements.

Adding an additional management resource will help to balance workload among the Chief Officers who are tasked with leading and operating the fire service, especially as it grows and adapts. This position will help address the added training requirements for high buildings as well as additional staff (career and paid-on-call). The position will also manage scheduling duties for the flexible firefighter program, which will continue to expand as firefighters are added.

The position serves as the first step in expanding staffing within WKFR and forms a base upon which future staffing will be built. Because of the critical coordination provided by this position it is recommended that it be filled as soon as possible.

Need No.	Need Title	Need Description
3	Rostering of Staff	Ensure response during off-duty hours, when required
3a	Training & Safety Officers	On-call pay evenings, weekends, stat holidays
3b	Second Chief Officer	On-call pay evenings, weekends, stat holidays
3c	Paid-On-Call Firefighters	On-call pay during times of low historical turnout

Rostering staff involves scheduling 1 or more staff to be available (from home) and committed to respond when requested, in return for compensation less than their regular hourly rate.

Staff that are outside of regular working hours or paid-on-call firefighters who are not full time, but called when needed could be 'rostered' to guarantee a response during off-duty hours.

While the response may be delayed as staff would be coming from home, it would still be more effective than "hoping" off duty staff would respond. Rostering has been used within WKFR in the past for POC firefighters during extended periods of extreme fire danger. Regionally, both Peachland and Lake Country regularly roster their firefighters to ensure an adequate response.

It is recommended that at least 1 Safety Officer and at least 8 POC firefighters be rostered. This would include POC Officers and Apparatus Drivers to ensure these vital positions are filled. Rostering could be phased-in to achieve this measure prior to occupancy of the first high building, starting with times proven to historically have a low response from staff and expanding to cover all evenings, weekends, and stat holidays.

It is further recommended that a second Chief Officer be scheduled on-call outside of working hours. Currently, a single Chief Officer is on-call 24/7 and responds to all multiple alarm (major) incidents within 90 seconds of being requested. Chief Officers are compensated for this duty as a part of their annual salary. Each Chief Officer is on call for approximately 12 weeks per year. The Fire Chief often acts as a 'second' Chief Officer available to support when needed.

It is recommended that this 'second' Chief Officer role be formalized when the first high commences construction. This will ensure a guaranteed response of 2 Chief Officers to major incidents to provide command, control and support to the incident including Public Information and media liaison as well as coordination with external agencies and the Emergency Operations Centre.

Need No.	Need Title	Need Description
4	Recruit/Retain POC Firefighters	Achieve max strength of 70 (35 per station)

The deployment plan counts on the minimum response of at least 1 engine (4 firefighters) from each POC fire station (total 2 engines w/8 staff). This requirement includes an officer and driver for each truck. To guarantee this response (regardless of time of day) it is recommended that the overall number of POC firefighters within WKFR be increased. Not every POC firefighter is available all the time, so more staff is required than apparatus positions to be filled.

	Riding Positions	Total Positions	FUS Minimum	Current	Target
#33 – Rose Valley	Engine (5) Squad (5)	10	15	20	35
#34 – Glenrosa	Engine (5) Squad (5) Tender (3)	13	15	20	35

A response above 1 engine from each hall will help further address workload at the scene of a major incident, reduce the need for mutual aid assistance or provide additional coverage to the city. POC staff can also respond directly to an incident scene and provide manpower if directed to do so.

POC staff leave the organization for a number of reasons, but turnover averages 10-15 per year as these highly trained staff often leave for full time jobs in other locations within the fire service.

Need No.	Need Title	Need Description
5	Administrative Support	Support for Scheduling, Rostering (round out current .6FTE to full time)

As the fire service continues to grow and staff numbers increase, tasks such as scheduling and payroll grow more complex. The addition of rostering and another Chief Officer creates the need for additional scheduling support and administrative coordination.

WKFR currently has 1.6FTE of administrative support and this recommendation adds another 0.4FTE to make the position full time.



# West Kelowna Fire Rescue

## Fire Service Needs for Complex Buildings



### Appendix A – Staffing Factor Calculation

The calculation utilizes historical WKFR absence data, combined with allotted vacation leaves for current staff to determine the **number of FTE's required to fill one firefighter position 24/7.**

When this number is known (the staffing factor), the number of firefighters for a given 'authorized duty strength' can easily be determined.

- **Current State** - 8 firefighters on duty 24/7 today
- **Future State** - recommended additional 3<sup>rd</sup> company of 2 firefighters (10)

West Kelowna Fire Rescue Staffing Factor Calculation	
Annual Days of Work	365 days
Hours of Work per Day	24 hours
Annual Hours of Work per Firefighter position (24/7)	8,760 hours
Number of Shifts	4 shifts
Annual Hours worked per FTE	2,190 hours
FTE Work Week	42 hours
Average Absense per FTE (sick, WorkSafe, other)	130 hours
Average Vacation Leave per FTE	315 hours
Other Leave per FTE (Banked Callback/Off Duty Training)	60 hours
Total Average Leave per FTE (5 year average)	505 hours
Hours worked by average FTE	1,685 hours
WKFR Staffing Factor	
<i>Number of FTE's required to fill one firefighter position 24/7</i>	5.20 FTE's
Current State	
WKFR Authorized on Duty Strength (24/7 positions)	8 firefighters
Number of firefighter FTE's required	41.59 FTE's
Future State	
Additon of 3rd Company (+4 positions to authorized duty strength 24/7)	10 firefighters
Number of firefighter FTE's required	51.99 FTE's
<b>NEW firefighter FTE's required</b>	<b>9.99 FTE's</b>

To add a 3rd company (12 firefighters on duty 24/7) 10 additional FTE's are required.