CLEARWATER COUNTY FIRE SERVICE MASTER PLAN/STUDY

Final Report - November 25, 2020

Presented to:

Clearwater County
P.O. Box 550
4340 – 47 Avenue
Rocky Mountain House, AB T4T 1A4

Submitted by:

Behr Integrated Solutions Inc.
750, 600 – 6 Avenue SW
Calgary AB T2P 0S5

www.behrintegrated.com

PREFACE

This document Service Master Plan serves as Clearwater County's Fire Service Master Plan. The primary motivation for developing this document is to assist Clearwater County and the Clearwater Regional Fire Rescue Service in establishing a long-term strategy. This strategy is based on community risk, safety, corporate priorities, and Council approved budget allocations. This document will be used as a tool to evaluate and forecast immediate and future emergency service needs of the community.

ACKNOWLEDGEMENTS

Behr would like to specifically acknowledge the leadership, diligence and continuous improvement focus of Fire Chief, Steven Debienne. While there are several challenges for the Clearwater County and the Clearwater Regional Fire Rescue Services, Chief Debienne remained positive in his efforts to enhance the department and public safety for the community and its citizens. Clearwater County and the Clearwater Regional Fire Rescue Services firefighters are dedicated and engaged in all facets of their community. Their pride in the department is clear.

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ACRONYMS

ABC	Alberta Building Code	HIRF	High Intensity Residential Fires
AFC	Alberta Fire Code	KSA	Knowledge, Skills and Abilities
AHJ	Authority Having Jurisdiction	MCI	Mass Casualty Incident
AHS	Alberta Health Services	MFR	Medical First Response
CAO	Chief Administration Officer	MOU	Memorandum of Understanding
CN	Canadian National	MVC	Motor Vehicle Collision
CREMA	Clearwater Emergency Management Agency	NFPA	National Fire Protection Association
CRFRS	Clearwater Regional Fire Rescue Services	NIST	National Institute of Standards and Technology
DG	Dangerous Goods	OHS	Occupational Health and Safety
ECC	Emergency Communications Centre	POC	Paid-On-Call/Volunteer Firefighter
EM	Emergency Management	PPE	Personal Protective Equipment
EMS	Emergency Medical Services	PSAP	Public Safety Answering Point
EOC	Emergency Operations Center	QMP	Quality Management Plan
ERF	Effective Response Force	SCO	Safety Codes Officer
ERT	Emergency Response Team	SOC	Standards of Cover
FF	Firefighter	SOG	Standard Operating Guidelines
FSMP	Fire Service Master Plan	SOP	Standard Operating Procedures
FTE	Full-time Equivalent	WCB	Workers' Compensation Board
GIS	Geographic Information System	WUI	Wildland Urban Interface
GoA	Government of Alberta		

TABLE OF CONTENTS

EXECUTIVE SUMMARY ..... **I**
INTRODUCTION I
EMERGENCY SERVICES MASTER PLANNING PROCESS I
DEPARTMENT OVERVIEW II
COMMUNITY AND RISK OVERVIEW IV
SUMMARY OF OBSERVATIONS AND RECOMMENDATIONS V
IMPLEMENTATION COSTS AND TIMEFRAME OF RECOMMENDATIONS XX
CONCLUSION XXIII
SECTION 1 INTRODUCTION **1**
1.1 PROJECT BACKGROUND AND SIGNIFICANCE 1
1.2 PROJECT SCOPE 1
1.2.1 Project Purpose 1
1.2.2 Project Objectives 1
1.3 PROJECT APPROACH 2
1.4 FIRE AND EMERGENCY SERVICES MASTER PLANNING PROCESS 3
1.5 STANDARDS AND REFERENCES 4
1.6 CONSULTATIVE PROCESS 4
1.6.1 Targeted Interviews 4
1.6.2 Online Firefighter Survey 5
1.6.3 Community Comparative Analysis 5
1.7 STUDY CONSIDERATIONS 6
SECTION 2 COMMUNITY PROFILE AND RISK OVERVIEW **8**
2.1 COMMUNITY OVERVIEW 8
2.2 ECONOMY 8
2.2.1 Economic Indicators 9
2.3 GROWTH PROJECTIONS 9
2.3.1 Community Demographics 10
2.4 COMMUNITY PLANNING AND DEVELOPMENT 11
2.5 COMMUNITY RISK ASSESSMENT 14
2.5.1 Factors Contributing to Risk 14
2.5.2 Risk Management 15
2.6 RISK EVALUATION VS. SERVICE LEVELS 15

2.7 STRUCTURAL FIRE RISK ANALYSIS 19
2.8 COMMUNITY RISK ANALYSIS OVERVIEW 23
2.8.1 Large and Diverse Fire Department Response (Demand) Zone 23
2.8.2 Multiple Transportation Corridors 26
2.8.3 Wildland Urban Interface Fires 28
2.8.4 Increasing Tourist Activity 30
2.8.5 Limitations of the Paid-On-Call Staffing Model 30
2.8.6 Severe Weather Events 32
SECTION 3 DEPARTMENT PROFILE 33
3.1 DEPARTMENT OVERVIEW 33
3.1.1 Mission, Vision and Values 34
3.2 HUMAN RESOURCES 34
3.2.1 CRFRS Committees 35
3.2.2 Staffing Complement 38
3.2.3 Department Leadership and Management 40
3.2.4 CRFRS Administration Positions 40
3.2.4.1 Fire Chief 40
3.2.4.2 Deputy Fire Chief 40
3.2.4.3 Assistant Fire Chief 41
3.2.5 CRFRS Non-Administrative Positions 46
3.2.5.1 Battalion Chief: Paid-On-Call 46
3.2.5.2 Captain Firefighter: Paid-On-Call 46
3.2.5.3 Lieutenant Firefighter: Full-time and Paid-On-Call 46
3.2.5.4 Firefighter: Full Time and Paid-On-Call 47
3.2.5.5 Recruit Firefighter: Paid-On-Call 47
3.2.5.6 Support Staff: Non-Operational 47
3.3 REMUNERATION, RECRUITMENT, SELECTION, RETENTION, ADVANCEMENT, AND PROMOTION 47
3.3.1 Remuneration 47
3.3.2 Recruitment 48
3.3.3 Selection and Training of Recruit Firefighters 50
3.3.4 Retention 51
3.3.5 Advancement and Promotion 52
3.4 TRAINING 52

3.4.1 Industry Recommended Qualifications 55
3.5 HEALTH AND WELLNESS 56
3.6 CORE SERVICES 56
3.7 CORE SERVICE SPECIFICS 60
3.7.1 Structural Fire Suppression 60
3.7.2 Industrial Firefighting and Response 61
3.7.3 Motor Vehicle Collisions 62
3.7.4 Medical First Response 62
3.7.5 Wildland Urban Interface Firefighting 63
3.7.6 Dangerous Goods Response 63
3.7.7 Technical Rescue 64
3.7.8 Citizen Assist 65
3.8 EMERGENCY MANAGEMENT PROGRAM AND EMERGENCY COORDINATION CENTRE (ECC) 66
3.9 CRITICAL TASK ANALYSIS 66
3.10 FIRE INSPECTIONS, INVESTIGATIONS AND PUBLIC EDUCATION PROGRAM 68
3.10.1 Fire Inspections 69
3.10.2 Fire Pre-Plans 70
3.10.3 Fire Investigations 71
3.10.4 Fire Prevention Public Education 71
3.11 MUTUAL AID AND OTHER SERVICE AGREEMENTS 72
3.12 ASSETS AND INFRASTRUCTURE 73
3.12.1 Fire Station Overview and Assessment 74
3.12.2 Training Facilities 80
3.13 EQUIPMENT 82
3.13.1 Apparatus and Light Duty Vehicles 82
3.13.2 Fire Apparatus Replacement and Dispersal 94
3.14 ANCILLARY EQUIPMENT 95
3.15 PERSONAL PROTECTIVE EQUIPMENT 95
3.16 SPECIALIZED OPERATIONS EQUIPMENT 95
3.17 EQUIPMENT AND APPARATUS MAINTENANCE 96
3.18 MUNICIPAL COMPARATIVES 96
3.18.1 Department Profile 97
3.18.2 Budgets 98

3.18.3 Response Data 99
SECTION 4 RESPONSE STATISTICS AND PERFORMANCE STANDARDS 102
4.1 RESPONSE AND SERVICE CATEGORIES 102
4.2 INDUSTRY STANDARDS 103
4.2.1 Intervention Time 105
4.2.2 Effective Response Force (ERF) 107
4.2.3 Occupational Health and Safety Guide for Firefighting 114
4.2.4 Alberta Building Code Limiting Distance and Fire Department Response (HIRF) Requirements 116
4.3 RESPONSE STATISTICS 117
4.3.1 Historical Response Data 119
4.3.2 Paid-On-Call Firefighters: Challenges and Limitations 131
4.4 RESPONSE TIME MAPS 133
4.4.1 Response Map Analysis 133
4.5 CRITICAL TASK ANALYSIS 145
SECTION 5 CONCLUSION 151
APPENDIX 'A' GLOSSARY OF TERMS 152
APPENDIX 'B' LIST OF FIGURES, MAPS, IMAGES, AND TABLES 154
APPENDIX 'C' THEORETICAL RESPONSE MAPPING METHODOLOGY 158
APPENDIX 'D' WORK EXPERIENCE PROGRAM 162
APPENDIX 'E' CRFRS FIREFIGHTER SURVEY RESULTS 171
APPENDIX 'F' CRFRS APPARATUS AND LIGHT DUTY VEHICLE INVENTORY REPLACEMENT PLAN 182

EXECUTIVE SUMMARY

Introduction

Today's fire and emergency services are continually being challenged by budget constraints, rising call volumes, and increasing and unusual risks against a backdrop of expectations to do more with less. The demand for emergency response and management services has expanded, causing the role to shift and for services to diversify. Failing to address these challenges leaves both the community and its responders vulnerable.

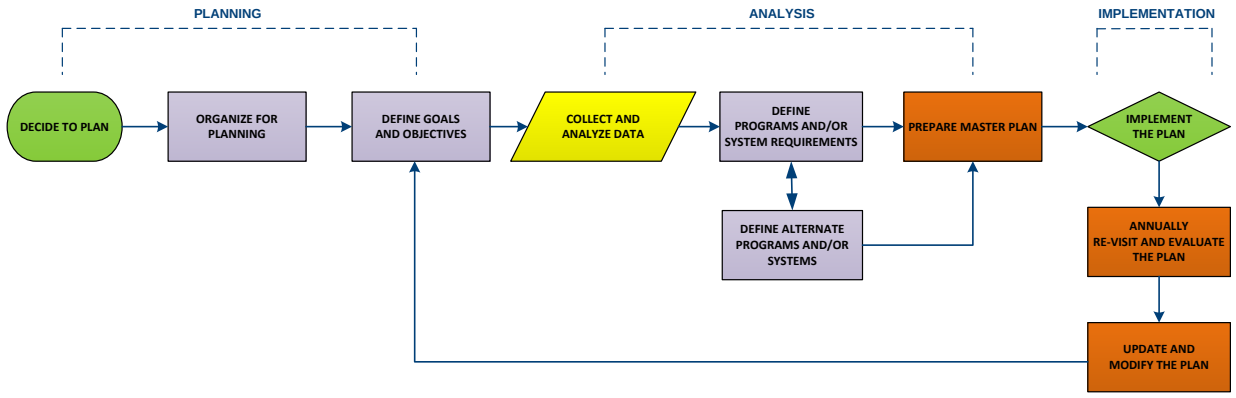
Effective management of an emergency services department requires a clear understanding of risk and the ability to administer an appropriate response to manage the risks. The primary focus of this project was to review the current state of the Clearwater Regional Fire Rescue Services (CRFRS) and provide recommendations in the form of a Fire Service Master Plan (FSMP) that will assist Clearwater County (the County) in developing long-term strategies for its emergency services. This document aligns with the direction of the community in a planned incremental approach. It supports long term growth while building on Council's strategic goals such as good governance and safe community.

This document should be considered an essential priority. It should be evaluated on an annual basis and updated as required to reflect any changing risks and circumstance of the community. The recommendations and options contained in this document should be considered critical requirements for public, firefighter, and community safety.

Emergency Services Master Planning Process

The following diagram illustrates the process used to complete and our recommendation to maintain this Plan.

Figure 1: Master Planning Process



Department Overview

Clearwater Regional Fire Rescue Services was formed in 1999 bringing together Clearwater County, the Town of Rocky Mountain House, and the Village of Caroline fire departments. CRFRS responds out of five geographically located stations throughout the County plus one separate Headquarters. CRFRS is considered a primarily POC composite fire service relying on minimal full-time staff supported by POC firefighters who respond from their respective dwellings or place of employment when needed.

CRFRS covers an area of 18,682 square kilometers with their firefighters typically responding out of their closest assigned fire station. The demographics vary significantly throughout the region and results in the remote fire stations struggling to recruit and maintain a healthy number of firefighters.

Clearwater Regional Fire Rescue Services currently consists of the following staff to deliver emergency services:

- One Fire Chief – (permanent full-time)
- One Deputy Chief (permanent full-time)
- Two Assistant Fire Chiefs (permanent full-time) * one vacant at time of report*
- Three Battalion Chiefs (volunteer POC)
- One Senior Captain (volunteer POC)
- Six Captain Firefighters (volunteer POC)
- Ten Lieutenant Firefighters (volunteer POC)
- 52 Firefighters (volunteer POC)
- 15 Recruit Firefighters (volunteer POC)
- Two Administration support (full-time)

Note: *CRFRS staffing levels of paid-on-call firefighters vary given the recruitment and retention challenges with volunteer/POC firefighters.*

CRFRS has mutual aid agreements for emergency response and/or emergency management through a contractual arrangement with several Counties and Towns. Emergency dispatch services are provided to CRFRS through Red Deer 911 Emergency Communications Centre (Public Safety Answering Point (PSAP).

Clearwater County has a well-defined list of services provided by the CRFRS and the associated competencies linked to these services. Clearwater County Bylaw 1069/20 identifies the County's intent to operate fire and rescue services and provide the following emergency and non-emergency services:

3.1 Council does hereby establish the Fire Department and outlines the duties as follows:

- *a) prevent control, and extinguishing fire incidents*
- *b) provide a 911 public service answering point and dispatch service*
- *c) investigating the cause and origin of fires pursuant to the QMP and the Safety Codes Act*
- *d) pre-fire planning and fire inspections pursuant to the QMP*
- *e) preserving life and property and protecting persons and property from injury or destruction by fire*
- *f) preventing prairie or running fires and enforcing the provisions of the Forest and Prairie Protection Act*
- *g) responding to Hazardous Material incidents to mitigate the threat*
- *h) carrying out agreements with other municipalities or persons for the joint use, control and management of firefighters, fire extinguishing apparatus, general equipment, and rescue equipment*
- *i) maintaining and operating apparatus and equipment for extinguishing fires or preserving life and property*
- *j) initiate temporary traffic control on a highway*
- *k) rescue*
- *l) medical first response services*
- *m) fire and disaster planning*
- *n) preventative controls*
- *o) public education and information*
- *p) training or other staff development and advising*
- *q) to enforce County fire bylaws, fire policies, and where applicable Alberta fire legislation*
- *r) other incidents*

Further, the Intermunicipal Fire Services Agreement formalized in March 2020 describes the services by the CRFRS across the region.

Community and Risk Overview

Clearwater County has a typical mix of residential, commercial, industrial, institutional, and agricultural land use for a County with a population of just under 12,173 people, an area of 18,682 km^2 and has a largely a natural-resource-based economy. Mining, quarrying, oil and gas, agriculture, forestry, fishing, and hunting are the leading industries. Although there was a slight increase between 2018 and 2019 of 0.28%, future growth is expected to remain relatively flat. Rocky Mountain House is the largest centre in the County boundary. The general downward trend in population in County was also experienced in Rocky Mountain House. In the last decade, the population decreased from 7,189 in 2010 to 6,688 in 2019. Including the Town of Rocky Mountain House and Village of Caroline the population is nearly 20,000. Our community risk factor analysis identified the following factors:

- Large and diverse regional response area
- Wildland urban interface fires
- Transportation corridors and the potential of hazardous materials release and motor vehicle collisions
- Structure fires
- The impact of tourism and the seasonal increase in population
- Limitations of a primarily POC service delivery model

These factors combined with the limitations of a primarily paid-on-call (POC) composite fire service need to be given due consideration as part of the County's overall emergency response strategy.

Summary of Observations and Recommendations

The following recommendations are drawn from findings presented throughout the report. A timeframe within 0-48 months has been assigned to each recommendation, recognizing that the start and completion of any recommendation is based on annual corporate priorities and Council approved budget allocations.

Observation #1: The Government of Alberta (GoA) requires municipalities to regulate the development, construction, and fire protection requirements through the application of Alberta Building Code (ABC) and the Alberta Fire Code (AFC). The County is accredited for the Fire Discipline under the Alberta Fire Safety Codes Act. The County, Town and Village have recently renewed the Quality Management Plans and renewed in April 2020. Fire inspection frequency is limited to a request, complaint, or concern. There does not appear to be a process to develop or maintain a list of building stock in any of the three municipalities. High and extreme risk properties are not identified. There does not appear to be a system for reviewing new and existing properties. As a result, the CRFRS has limited access to adequate data to identify high-priority structure fire risks and develop risk management strategies. The County's Planning and Development Department provides CRFRS with development permits after they have been approved. This does not allow for a fire service review or input including confirmation of Fire Safety Code regulations. The Town provides CRFRS with business licence applications and does not provide development permits.

Reference: Section 2.7, Structural Fire Risk Analysis, p. 19

> ***Recommendation #1: Develop a comprehensive structural risk inventory program and plan reviews for development applications, building permits and business licence reviews***
>
> *(Suggested completion: 24-36 months)*
>
> *It is recommended that the Fire Chief work with Planning and Development staff to develop a process to inventory all existing and new properties, and that the building inventory be classified, documented, and maintained using the Alberta Building Code Major Occupancy Classification system. Monitoring changes in building stock allows the community to be well positioned to assess the impact of future growth and the changing risk profile of the community, adjusting the concentration and distribution of fire department resources as required. Further a comprehensive fire service review process for development applications, building permits and business licences be established prior to approval.*

Observation #2: As previously discussed, the data regarding building stock and specific properties is limited. Further, the risks and characteristics of the large response area covered by CRFRS differ in the demand zones of the five stations. One of the challenges the County has in providing services is to strike the balance between standardization of services and service levels and addressing the unique risks in the varying regions across the County.

A standards of cover policy identifies high and extreme risks in a community and measures the current performance of the fire service to ensure these risks are managed safely. This policy is used to define services, service levels and outline performance reporting requirements. Where service gaps are identified, the analysis of the unique and common risks in specific demand provide elected officials with the information required to make informed service level decisions. This information can be used to identify performance reporting requirements. Appropriate levels of performance reports can be shared with key stakeholders and inform the public.

One of the common themes in the interviews was a lack of public understanding of the general operations of the CRFRS and the lack of information flowing back to key stakeholders. The information gathered in the standards of cover process can be shared both at the senior administrative and elected official level. This can facilitate a purposeful and informed decision-making framework for both these officials regarding the need for specific services, setting service levels, allocating funding, and establishing performance goals for the CRFRS.

In the absence of regular performance reporting, not all municipal partners or citizens have a clear understanding of the services and service levels of the CRFRS. Once completed, a standards of cover policy may be shared with the public to provide clarity with respect to services provided, service level expectations.

Reference: Section 2.8.1, Large and Diverse Fire Department Response (Demand) Zones, p.23

> ***Recommendation #2: Undertake a comprehensive risk analysis of the individual station demand zones and develop a standard of cover to effectively manage identified risks for each***
>
> *(Suggested completion: 0-24 months)*
>
> *It is recommended that CRFRS undertake the development of a standards of cover for all demand zones within the County.*
>
> *A standards of cover policy offers several benefits to the operation and governance of the CRFRS. A comprehensive risk analysis completed at the level of individual demand zones would identify all high, extreme, and unique risks within the different demand zones. It also involves a complete review of existing services and service levels, standard operating guidelines and policies, a review of fire department resource distribution and concentration based on regional risk factors, and fire department performance measurement and reporting.*

Observation #3: Dangerous goods and hazardous materials are transported by road and rail through Clearwater County, many traveling through the centres of Rocky Mountain House and Caroline. No dangerous goods routes are identified. The quantities and types of materials does not appear to be monitored. There are several major intersecting highways and rail crossings which increase the risk of collisions involving hazardous materials. A major hazardous materials release because of a collision or derailment near populated regions is assessed as a low probability, high consequence event that could result in a high to extreme life-safety risk.

Reference: Section 2.8.2, Multiple Transportation Corridors, p.26

Recommendation #3: Explore the establishment of a dangerous goods route within the response zones

(Suggested completion: 24-36 months)

It is recommended that the County explores the establishment of dangerous goods transportation protocols within the region. If a reasonable alternative transportation route can be established, transportation of dangerous goods should be limited to a specific route, or restricted to certain hours of the day, avoiding the centres of Rocky Mountain House and Caroline to minimize the life-safety risk. The process for establishing dangerous goods routes is involved and will impact several stakeholders. Understanding the type and quantities of hazardous materials traveling through the municipalities is necessary to fully understand the level of risk. The GoA publication from Alberta EDGE, Guidelines for Establishment of Dangerous Goods Routes in Alberta Municipalities, June 2018, provides an excellent understanding of the process and challenges in considering this option. This recommendation will reduce the risk but does come at the expense of managing and enforcing the change.

Observation #4: Staffing shortfalls were identified by interview and survey participants, particularly in Nordegg, at Station 50. Nordegg is a small community with a limited pool of potential firefighter candidates. The 2020 recruitment efforts were able to draw an additional three potential candidates from this region. As a result, the availability of trained firefighters and the ability to recruit new firefighters in this area is limited. However, maintaining a fire service without the staff to respond creates a false sense of security and does not manage the known risks in this demand zone.

Additionally, Station 50 is in an isolated location. The nearest CRFRS resources are in Rocky Mountain House, nearly an hour away. Despite the co-response coming from Rocky Mountain House, firefighters responding to fire or rescue events will be left to manage the event for nearly an hour before additional resources arrive. Responding to rescue events on roadways or fire events without an effective response force increases the risk of injury to firefighters.

At approximately 40 responses per year, the emergency events occurring in the response zone of Station 50 and the overall risk remains relatively low. In a primarily POC fire department, placing permanent full-time staffing in Station 50 is cost prohibitive. However, service demand is linked to tourism, which is increasing in this region, with seasonal peaks in summer months. In the interviews, it was suggested that permanent and part-time residents expect a reasonable emergency response. It is understood that there will always be a response to an emergency although it may originate from the assisting station (Station 60) due to the unavailability of Station 50 POCs. The results of this will be extended response times.

Reference: Section 2.8.5, Limitations of the Paid-On-Call Staffing Model, p.30

Recommendation #4: Engage the residents of Nordegg to support innovative approaches to sustain the community's fire/rescue response

(Suggested completion: 0-12 months)

Clearwater County staff and the residents of Nordegg must work together to find a reasonable solution to the current shortfall in fire/rescue response occurring in Nordegg. Potential solutions must balance the risks to the community and first responders with the cost of implementation and the relatively low demand for fire/rescue services throughout the year. Potential solutions might include:

- *An increase in local participation in the CRFRS POC system*
- *Incent current members of the CRFRS from other communities to relocate for periods of time during the peak season (could include improved housing arrangements, implementing an on-call stipend or covering member's expenses while on-call)*
- *Explore a firefighter work experience program (with the caveat that students must be supervised)*

Observation #5: It is important to respect the time and commitment that is required by all the members of each committee. Of particular concern is the time required by the CRFRS administration team which requires participation outside of their normal work hours. Feedback from interviews have indicated that committee meetings typically take two to three hours to complete.

Many of the firefighters interviewed, some of whom were existing committee members, expressed concern and frustration over the effectiveness of these committees. This sentiment was also apparent by some firefighters participating in the survey. There has been an expectation that these committees are decision making bodies rather than recommendation-based committees. It was suggested through the interviews that items agreed to in these committees were not considered final decisions.

While committees can be very beneficial in providing frontline input to operational decisions there is a risk that expectations of members are not met, leading to frustration and resentment that can negatively affect the entire service, thereby defeating the purpose of these committees.

As the CRFRS is not unionized, it does not have a typical labour-management meeting structured where employee/management issues can be heard and resolved. Rather, the CRFRS relies on their Membership Engagement Committee to address operational concerns with the chief officers, which may unnecessarily involve outside influences in operational decision-making. Further, this approach may invite back-door type of issue resolution which undermines managerial authority and further frustrates issue resolution.

The Clearwater County OHS Committee does not appear to have sufficient representation for the needs of the CRFRS firefighters. An internal OHS committee should be implemented for CRFRS.

The Apparatus and Equipment, Apparel and Life-Safety Committees definitely serve a purpose within the CRFRS but may be better served as adjunct or sub-committees to a main employee/management committee.

Reference: Section 3.2.1., CRFRS Committees, p.35

Recommendation #5: Re-evaluate internal CRFRS committees

(Suggested completion: 6-12 months)

CRFRS has an immediate need to evaluate their existing employee/employer committees. This may require a total restructure of internal committees with new names, terms of reference and membership with the goal of improving committee effectiveness.

Proper minute taking with agenda items and actions are to be followed. These minutes should be distributed to each worksite in a timely manner. Specifically, the following is recommended:

- *Develop an over-arching CRFRS Employee/Management Committee*
- *Develop a CRFRS OHS committee*
- *Structure the Apparatus and Equipment, Apparel and Life Safety committees as adhoc or sub-committees that are given specific mandates as required or directed by the Fire Chief*

Observation #6: During interviews with the Fire Chief, Deputy Chief and Assistant Fire Chief it was obvious that each demonstrates an enthusiastic and professional passion for the fire service and specifically CRFRS. The interviews/survey with staff, Administration and Political levels indicated that the CRFRS Administrative needs to improve their internal communication processes amongst the team and key stakeholders.

Reference: Section 3.2.4.3., Assistant Fire Chief, p.41

Recommendation #6A: Facilitate a team building workshop with senior CRFRS administration

(Suggested completion: 3-6 months)

It is recommended that the administration team for CRFRS undertake a team building workshop or planning session facilitated by a third party with the purpose of clarify roles and responsibilities, and developing a high performing administration team with clearly defined immediate and long-term goals for the CRFRS. Further, the development of a work plan with Specific, Measurable, Realistic Attainable and Timely (SMART) goals will ensure that the CRFRS Administration team efforts are focussed on priorities.

Recommendation #6B: Update CRFRS job descriptions

(Suggested completion: 3-6 months)

That updated job descriptions be shared with the current position incumbents. This activity can occur in conjunction with the recommended workshop.

Observation #7: Information gathered from the interviews and surveys to stakeholders alluded to a sense of fragmentation regarding the direction of CRFRS from operational, administrative, and political levels.

Reference: Section 3.2.4.3., Assistant Fire Chief, p.41

Recommendation #7: Develop and share short- and long- term goals as an organization

(Suggested completion: 3-6 months)

CRFRS Administration work closely together with the Director of Emergency and Legislative Services to provide mechanisms to share their short term and long-term goals as an organization and with key stakeholders.

Observation #8: The Fire Chief, Deputy Chief and Assistant Fire Chiefs are required to be on call-out status on a rotational basis. Due to the vacant Assistant Chief position the rotation is one week on call every three weeks. This requirement places additional demands on their capacity to effectively manage their respective administrative responsibilities. The Fire Chief, Deputy Chief and Assistant Fire Chief are putting in a large amount of overtime hours consistently to meet all the demands of their responsibilities and those responsibilities that were previously being performed by the vacant Assistant Chief position. This also places additional workload pressure on the three Administration Officers and is excessive and not sustainable. Further, during the interviews and consultations there were challenges identified regarding when the HQ Chief Officers are required to respond or monitor responses, and the empowering the responding Fire Officers and not requiring the Battalion Chiefs to be on scene.

Reference: Section 3.2.4.3., Assistant Fire Chief, p.41

Recommendation #8A: Update the current department organizational structure (See Image 3, pg.44)

(Suggested completion: 6-9 months)

Re-classify one of the Assistant Chief positions to Deputy Chief. This will allow the Fire Chief to organize the administrative responsibilities with definitive responsibilities and a direct reporting relationship. The Deputy Chief of Operations would have primary responsibilities for the frontline operations of CRFRS with the Battalion Chiefs reporting directly. The Deputy Chief of Support Services and Training would be responsible for those areas of CRFRS that support the safe and effective delivery of services to the communities within Clearwater County. These services include, but not limited to:

- *Recruitment*
- *Training*
- *Promotional programs*
- *Purchasing*
- *Vehicle/apparatus maintenance and replacement*
- *Fire stations*
- *Equipment*
- *Personal protective equipment (PPE) and uniforms*
- *Further support as assigned by the Fire Chief*

As the portfolios of the Deputy Chief of Support Services and Training is too large to effectively manage alone, it is recommended that the vacant Assistant Chief position be filled and assigned to report directly to the Deputy Chief of Support Services and Training.

Recommendation #8B: Establish an 'alarm assignment response criteria' for Battalion Chiefs and the HQ Fire Chief, Deputy and Assistant Chiefs

(Suggested completion: 6-9 months)

The Fire Chief, in consultation with the Battalion, Deputy and Assistant Chiefs develop an 'alarm assignment response criteria' that is imbedded with Dispatch. The first responding Officer as part of the size up declares the alarm response required. For example:

- *First Alarm: Routine calls that do not require additional support from an assisting station or the recall of on-call staff. Primary response has the capacity to mitigate.*
- *Second Alarm: Working fires or emergencies that require a response from the assisting station and the recall of on duty staff (Battalion Chief).*
- *Third Alarm: Major events that require additional response from assisting stations, recall of Battalion and HQ Chief Officers.*
- *General Alarm: Recall of all on-call and off-duty firefighters*

Observation #9: CRFRS has taken advantage of recruitment opportunities in the community. Annual firefighter recruitment drives have addressed the annual firefighter needs, however there may be opportunity to increase both the interest and applications for future POC firefighters if the recruitment drive was open year-round and intakes were commenced when sufficient numbers of applicants are received and vetted. There are opportune times during the year where there is an increased focus on fire safety in communities. Examples are during the annual Fire Prevention week each October, where increased promotion of firefighter recruitment can be advertised.

Reference: Section 3.3.2., Recruitment, p. 48

Recommendation #9: Consider increasing recruitment drive to an open time frame

(Suggested completion: 12-24 months)

It is recommended that the CRFRS consider increasing the recruitment drive to an open time frame and commencing firefighter intake when shortages are identified, and enough candidates are available.

Observation #10: Another program that has been successfully utilized in POC fire services is the Workplace Experience Program (WEP). This accepted program provides opportunity for new NFPA 1001 Level I, II firefighters to gain valuable work experience and further their knowledge base by working alongside an established fire department for what is typically a 12-month assignment. During this time, these firefighters are housed at the fire hall and provide Monday to Friday daytime response coverage for what at many times has limited POC firefighter availability. These firefighters are compensated for responses and provided further training opportunities.

Reference: Section 3.3.2., Recruitment, p. 48

Recommendation #10: Consider a work experience program (WEP) for the service

(Suggested completion: 0-12 months)

It is recommended that the CRFRS consider the work experience program (WEP) for their service. This may prove to be very successful in Nordegg where there is a shortage of available POC firefighters, particularly during the normal Monday to Friday times.

Observation #11: CRFRS POC turnover rates have been manageable, with approximately one to two firefighters leaving each year. There are however several senior experienced members with 25 years of service or more, who may be approaching retirement. This places an increased emphasis on training and development to ensure there are qualified individuals to lead their respective crews effectively and safely in challenging and hazardous conditions.

The loss of more senior and experienced personnel is leading to a junior and less experienced firefighter complement for CRFRS. Given this demographic shift, exploring opportunities to retain this experience in some capacity will serve the CRFRS well.

Reference: Section 3.3.4, Retention, p. 51

Recommendation #11: Research retention opportunities for senior and/or retiring members in non-operational roles

(Suggested completion: 0-24 months)

It is recommended that the Fire Chief research opportunities to retain senior and/or retiring members in non-operational roles, such as coaching, mentoring, and administrative roles.

Observation #12: Feedback from the firefighters indicate that the promotional process may be in policy, however the current process has not been transparent and has created some frustration amongst potential officers.

Reference: Section 3.3.5., Advancement and Promotion, p. 52

Recommendation #12: Demonstrate a transparent and comprehensive promotional policy

(Suggested completion: 0-12 months)

The Fire Chief working with the POC and full-time officers to understand the current promotional policy that includes transparent and measurable criteria. Criteria such as attendance at practice sessions and emergency responses, teamwork and leadership, technical competence, commitment to CRFRS or community events that are criteria for promotion or advancement. In addition, to ensure enough firefighters are trained and ready to assume officer roles and other promotional opportunities, it is recommended that the Fire Chief establishes a sustainable succession plan.

Observation #13: The County has numerous mutual aid agreements; some of the agreements are recently executed while others should be reviewed and updated. In the event of a large structure fire, such as a high or low-rise apartment involving evacuation, CRFRS's resources are likely to be overwhelmed. SOG 672c, Response to High Rise Incidents details several the challenges involved, including evacuation, but does not identify the need to trigger mutual aid as soon as possible. The evacuation of an occupied apartment building is a resource intensive activity that could quickly exceed the capacity of the CRFRS.

Reference: Section 3.7.1., Structural Fire Suppression, p. 60

Recommendation #13: Amend or update mutual aid contracts to include automatic aid for select high-assembly occupancies.

(Suggested completion: 0-36 months)

CRFRS should consider updating the dispatching protocol and mutual aid contracts to include automatic aid in the event of a confirmed fire at specific high occupancy properties. This process could be programmed into the Red Deer Emergency Services dispatching system.

Observation #14: CRFRS provide rescue services also provided by Rocky Mountain Search and Rescue. This may create jurisdictional and role confusion in the event of a rescue. It may also result in the duplication of training and equipment.

Reference: Section 3.7.7., Technical Rescue, p. 64

Recommendation #14: Clarify roles and operating procedures with Rocky Mountain Search and Rescue

(Suggested completion: 12-24 months)

Potential efficiencies or improved effectiveness may be found by clearly defining the jurisdiction, roles, responsibilities, and operating procedures when responding to rescue events. At the very least, this process will improve the interoperability and relationships between the two agencies.

Observation #15: The CRFRS has reduced the frequency of fire inspections in Rocky Mountain House and Clearwater County. High risk occupancies are required to maintain life-safety systems. Cyclical fire inspection programs are the most effective method of ensuring the ongoing function of these systems. Failure of the life-safety systems increases the risk of injury or death to occupants and firefighters and increases the risk of property loss. An inspection program specifically focused on select high-risk occupancies would also support a systematic approach to a fire preplanning.

Robust inspection programs consume considerable capacity. Coupled with additional tasks, it is unlikely the Deputy Chief's position could support this service adequately. Additional support is required to provide inspection services adequate capacity.

Reference: Section 3.10.2., Fire Pre-Plans, p. 70

Recommendation #15: Implement a cyclical fire inspection program for industrial and high occupancy properties

(Suggested completion: 0-24 months)

The County and Town should consider modifying their QMPs with the aim of developing a more robust fire inspection program focused on a limited number of high-risk occupancies. This process will help to ensure life-safety equipment and system requirements are maintained throughout the operation of a high life-safety risk property. It will also assist in fire department preplanning for responses to high to extreme risk properties. The program could be developed as a combination of self-reporting requirements and inspections conducted by a Fire SCO. If implemented, it does require additional capacity and effort by the CRFRS Headquarters staff to maintain a robust inspection and pre-planning program.

Observation #16: CRFRS provides fire and emergency response out of five fire stations geographically located within Clearwater County. Two of the current fire stations (Condor station 20, and Nordegg station 50 are modern and fully functional for the needs of CRFRS for the foreseeable future.

Caroline station 30, while small by modern fire hall specifications, remains functional for CRFRS. This fire station has been identified for replacement; however no capital funding has been allocated to date.

Rocky Mountain House is fully functional, however is presently at capacity for safe and effective utilization by CRFRS. Future demands will be challenged with the current facility.

Reference: Section 3.12.1., Fire Station Overview and Assessment, p. 74

Recommendation #16: Conduct a conditional and functional assessment of the Rocky Mountain House Fire Station and Caroline Fire Station

(Suggested completion: 0-12 months)

The Town of Rocky Mountain House and Village of Caroline should work closely with CRFRS administration to conduct a functional, building envelop and general condition assessment anticipating present and future needs of CRFRS. This building assessment should include a building envelope study along with a mechanical, electrical, structural assessment, and building life expectancy.

Observation #17: The types of incidents that were captured for each year were not consistent and made it difficult to compare year to year. There are unique demands for CRFRS services in each area served by their respective fire halls that would assist in identifying specific hazards in each region and the need for specific types of equipment and training based on those hazards. Fire prevention activities can be identified where numbers of specific call types are high or on the rise.

Reference 4.1., Response and Service Categories, p. 102

Recommendation #17: Develop consistent incident tracking categories

(Suggested completion: 0-12 months)

That the CRFRS develop consistent incident types that can be used each year for comparative purposes. Sub-categories can then be developed as unique incident types occur.

Observation #18: The Red Deer ECC average call processing time is averaging 2 minutes and 38 seconds (158 seconds). The Alberta Fire Commissioner's office has deemed call processing time as part of the fire department's receipt of notification when applying the ABC Limiting Distance and Fire Department's 10-minute response regulation. Leading industry practices for Emergency Services Communication Systems NFPA 1221 indicate an optimum call processing time of 79 seconds (call-answered, verification and processing). Upon review of the CRFRS response statistics it was determined that there has been no utilization of pre-alerts as part of the fire department notification protocols.

Reference: Section 4.2.2., Effective Response Force, p. 107

Recommendation #18: Enhance fire department receipt of notification protocols

(Suggested completion: 6-12 months)

It is recommended the Fire Chief working closely with the City of Red Deer ECC to develop enhanced receipt of notification protocols that include consistent use of pre-alerts and other procedures that reduces the current 158 second average fire department notification process.

Observation #19: While there remains in effect the Clearwater County Intermunicipal Fire Service Agreement, CRFRS has not established a Standards of Cover policy that provides a comprehensive series of benchmarks that define an affordable, acceptable, and appropriate level of service for each of the unique areas within Clearwater County.

The benefits of completing an SOC will ensure that CRFRS has a clear understanding of the scope of overall risk for the community while enabling them to identify the resources and response capabilities necessary to adequately address those risks. The SOC will further ensure CRFRS has a safe and effective response force for all emergencies including fire suppression, emergency medical services and specialized response situations.

Reference: Section 4.2.3, Occupational Health and Safety Guide for Firefighting, p. 114

Recommendation #19: Establish service level benchmarks as part of the standard of cover as detailed in recommendation 2.

(Suggested completion: 0-24 months)

The SOC is used to establish performance benchmarks for existing levels of service, providing opportunities for continuous improvement at the same time. This would also provide a well-articulated description of services to be provided to the community with the full understanding and endorsement of elected officials.

The SOC provides governance and accountability measures where the policy makers (Council) have approved the core services, standards and service levels, and the resources (funding) required to delivery these services. Administratively the Fire Chief can provide Council with service level performance assessments as part of an accountability process. The SOC greatly enhances the roles and clarity between the political, administrative, and operational levels.

Observation #20: CRFRS has SOPs and SOGs for most of their operations. Maintaining current SOGs/SOPs is a labour-intensive undertaking for most departments. Discussion with the CRFRS Administration confirms the struggle with keeping these essential polies and guidelines current.

Reference: Section 4.2.3, Occupational Health and Safety Guide for Firefighting, p. 114

Recommendation #20: Establish an efficient process to review and updated SOGs and SOPs

(Suggested completion: 6-18 months)

It is recommended the Fire Chief establishes a review updating procedure that maintains SOPs/SOGs up to date and includes an accountability process to ensure all staff review on a recurring basis to ensure understanding and compliance. This is considered an essential requirement to comply with the current Guide for Firefighting.

Observation #21: CRFRS has access to extensive amount of data captured from all their activities. Structuring a consistent process of acquiring and analyzing the information in a consistent fashion will assist the CRFRS Administration in identifying gaps in their service objectives.

There is a requirement in the Intermunicipal Regional Fire Services Agreement to share CRFRS performance statistics in an annual summary report to the partner municipalities. Feedback from the regional partner Councillors expressed concern that they were not getting these reports.

Reference: Section 4.3.1., Historical Response Data, p. 119

Recommendation #21: Utilize records management and data tracking software to collect and analyze response performance

(Suggested completion: 12 -24 months)

It is recommended CRFRS conduct a minimum of quarterly reviews of response experience utilizing appropriate record, data tracking, and performance measuring tools for collection and analysis of performance objectives

Implementation Costs and Timeframe of Recommendations

Most of the recommendations presented in this report are achievable using existing staff or members' time and will therefore not pose significant additional costs to the Town or the County. Other recommendations regarding staffing, database management, and software will have associated costs. Costs are estimates based on the comparable costs incurred by other departments.

Notes:

- *'Cost Neutral' refers to the use of internal staff through a normal workday schedule. Additional costs may apply if overtime is required.*
- *Undertaking of these cost neutral recommendations are contingent upon the staffing increases identified in this Plan.*
- *Recommendations identified as 0-24 months are critical priorities.*

To assist with the prioritization and implementation of the various recommendations three criteria where utilized: human resources, apparatus and equipment, and facility. A color coding of red for immediate short term, yellow for intermediate, and green for longer term has been applied to these criterions.

Short Term	Intermediate	Long Term
0 - 24 months	24 - 36 months	36 - 48 months

	Recommendation	'21	'22	'23	'24	Source	Est. Cost	Comments
1	*Develop a comprehensive structural risk inventory program and plan reviews for development applications, building permits and business licence reviews*		●	●		*Staff Time*	*Cost Neutral*	*Contingent on the replacement of the Assistant Chief*
2	*Undertake a comprehensive risk analysis of the individual station demand zones and develop a standard of cover to effectively manage identified risks for each*	●	●			*Staff Time*	*Cost Neutral*	*Contingent on Headquarters' staff capacity*
3	*Explore the establishment of a dangerous goods route within demand zones*		●	●		*Staff Time*	*Cost Neutral*	

	Recommendation	'21	'22	'23	'24	Source	Est. Cost	Comments
4	*Engage the residents of Nordegg to support innovative approaches to sustain the community's fire/rescue response*	●	●			*Staff Time*	*Cost Neutral or Minimal Cost*	
5	*Re-evaluate Internal CRFRS Committees*	●	●			*Staff Time*	*Cost Neutral*	
6A	*Facilitate a team building workshop with senior CRFRS administration*	●				*Third Party*	*$3,500*	
6B	*Update CRFRS job descriptions*	●				*Staff Time*	*Cost Neutral*	
7	*Develop and share short- and long- term goals as an organization*	●				*Staff Time*	*Cost Neutral*	
8A	*Update the current department organizational structure*	●				*Third Party*	*Annual Salary as per AC Grid*	
8B	*Establish an 'alarm assignment response criteria' for Battalion Chiefs and the HQ Fire Chief, Deputy and Assistant Chiefs*	●				*Staff Time*	*Cost Neutral*	
9	*Consider increasing the recruitment drive to an open time frame*	●	●			*Staff Time*	*Cost Neutral*	*Instructor's time paid by the year*
10	*Consider a work experience program (WEP) for the service*	●				*Staff Time*	*Cost Neutral*	
11	*Research retention opportunities to retain senior and/or retiring members in non-operational roles*	●	●			*Staff Time*	*Cost Neutral*	
12	*Develop a transparent and comprehensive promotional policy*	●				*Staff Time*	*Cost Neutral*	

	Recommendation	'21	'22	'23	'24	Source	Est. Cost	Comments
13	*Amend or update mutual aid contracts to include automatic aid for select high assembly occupancies*	●	●	●	●	*Staff Time*	*Cost Neutral*	
14	*Clarify roles and operating procedures with Rocky Mountain Search and Rescue*	●	●			*Staff Time*	*Cost Neutral*	
15	*Implement a cyclical fire inspection program for industrial and high occupancy properties*	●	●			*Staff Time*	*Cost Neutral*	*Contingent on Headquarters' staff capacity and QMP direction approved by Councils*
16	*Conduct a conditional and functional assessment of the Rocky Mountain House fire station and Caroline fire station*	●				*Third Party Engineering*	*Unknown*	*Based on current building engineering fees*
17	*Develop consistent incident tracking categories*	●				*Staff Time*	*Cost Neutral*	
18	*Enhance fire department receipt of notification protocols*	●				*Staff Time*	*Cost Neutral or Cost Minimal*	
19	*Establish service level benchmarks as part of the standard of cover as detailed in recommendation 2*	●	●			*Staff Time*	*Cost Neutral*	
20	*Establish an efficient process to review and update SOGs and SOPs*	●	●			*Staff Time*	*Cost Neutral*	
21	*Utilize records management and data tracking software to collect and analyze response experience.*	●	●			*Staff Time*	*Cost Neutral*	

Conclusion

This master plan was completed is to assist Clearwater County and the Clearwater Regional Fire Rescue Services (CRFRS) in evaluating their current fire services and establishing a long-term strategy to provide efficient and effective fire, rescue, and emergency services for their regional community.

Behr analyzed several factors to determine the effectiveness and efficiency of the CRFRS. We evaluated the operational and administrative aspects of the department, as well as the regional community profile, risk factors, core services and programs, training, recruitment, and retention of Paid-on-Call (volunteer staff), facilities and major equipment.

Additionally, we evaluated the mutual aid agreements for emergency response and/or emergency management through contractual arrangements with several Counties and Towns. The response data from CRFRS was assessed with a focus on the current capabilities and alignment with both existing and projected risks, and levels of demand.

It is important to note that CRFRS is a well led, managed, and resourced POC composite fire service. We would like to specifically acknowledge the professionalism, leadership, diligence, and continuous improvement focus of Fire Chief, Steven Debienne, and the entire team of CRFRS.

There are several observations and recommendations in this review that need to be considered by both municipalities to improve operational effectiveness and efficiencies. Key among the 21 proposed recommendations is the establishment of a Standards of Cover Policy that identifies service levels for the diverse demand zones within the County, recruitment and retention of POCs, implementation of cyclical fire inspection program, and the functionality of the Rocky Mountain House Fire Station.

Although each recommendation has a corresponding timeframe, it is important to note this master plan needs to be re-visited on a regular or annual basis to confirm that the observations and recommendations remain applicable.

Implementation of the recommendations outlined in this master plan will better position CRFRS to mitigate community risk factors, monitor response capabilities and performance, while maintaining both excellent community relationship and value for money.

SECTION 1
INTRODUCTION

1.1 Project Background and Significance

Across Canada, all levels of government are facing strong demands for effective and efficient fiscal management. To meet these demands, elected officials are relentlessly looking for ways to reduce and avoid costs while still maintaining and increasing value in the delivery of services for their citizens.

This environment has generated the need for communities to adopt more business-like approaches for delivering public safety services. Senior fire and emergency service leadership, along with their municipal leadership realize they need to be proactive and examine all aspects of the service delivery systems and look for innovative efficiencies and effectiveness.

1.2 Project Scope

The goal of this project was to review Clearwater County's (the County) existing means of fire and emergency services delivery and develop a comprehensive and fiscally responsible Fire Service Master Plan (FSMP). The outcomes are based on in-depth analysis of operations and services provided to the community using applicable legislation, and 'industry-leading' practices and standards.

This FSMP includes documented evidence and recommendations that will determine an appropriate service delivery model along with strategic priorities, action plans, timelines, resources, and financial implications to position the Clearwater Regional Fire Rescue Service (CRFRS) to effectively and efficiently deliver emergency services to the community.

1.2.1 Project Purpose

This FSMP will provide a systematic and comprehensive approach to evaluating risk and the CRFRS' capabilities within the community. Additionally, the CRFRS will help formulate and communicate strategic direction and highlight opportunities for improved service delivery. Since various members of Council and the County's staff participated in developing the FSMP, it will also provide an objective basis to support decision-making with respect to community emergency service needs.

1.2.2 Project Objectives

This FSMP provides the results of the in-depth analysis done on CRFRS's operations and the services they provide to the community. It is to be used to determine satisfactory service delivery and position the County to be more effective and efficient in the delivery of emergency services through current and future challenges. This document identifies current and anticipated risks as well as applicable legislation, 'industry-leading' practices and relevant standards.

This document will serve as the County's blueprint for effective and efficient fire services and identifies:

- How CRFRS delivers fire and rescue services, including an investigation of underlying issues, budgets, human resources, service delivery protocols, bylaws, etc.
- How fire and emergency response services are delivered, with a view to ensuring existing efficiencies continue and effectiveness is documented and areas which require improvement are identified
- Administratively, what is and what is not working in fire and emergency response service delivery
- The needs, opportunities, and concerns with a view to requirements for streamlined and effective services for residents and safety of emergency responders, financial efficiencies, proper infrastructure, fair compensation, and rewards for emergency responders, etc.
- All areas including staffing, station location, vehicles, and apparatus (new and replacement cycles), vehicle and apparatus maintenance, other equipment, administration, training, mechanical, fire prevention, emergency planning and public education
- Any financial implications

1.3 Project Approach

Our activities included an assessment of,

- CRFRS' internal operations and its services
- Any previous studies done
- Current and future risks and recommendations for control and mitigation.

Using available data that included benchmark information, comparative community analyses[1], and stakeholder interviews with community personnel, we analyzed the services provided by CRFRS, both mandated and discretionary.

Our analysis considered the following areas:

- Total area of review
- Population and future growth
- Financial resources and constraints
- Economics
    - Tourism
    - Agriculture
    - Construction
    - Manufacturing
    - Utilities
    - Industrial activity

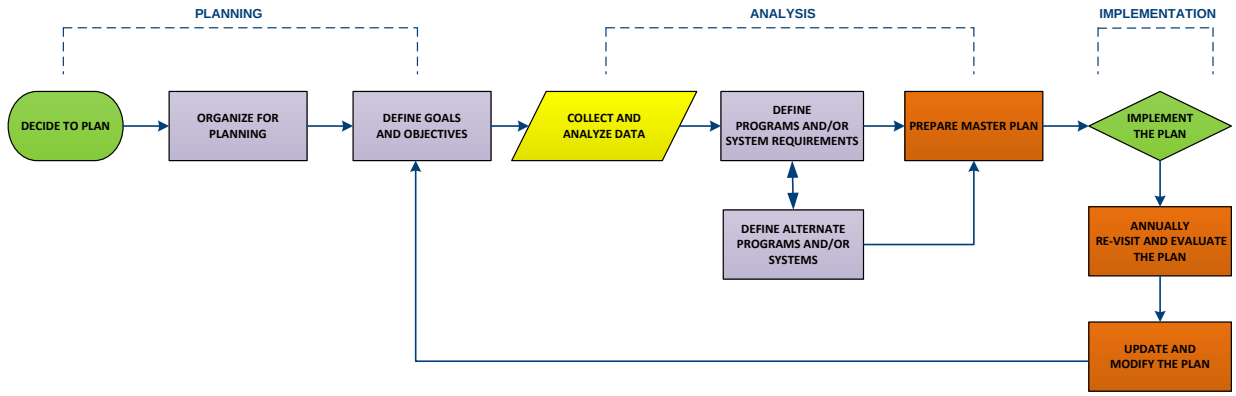
[1] *See Section 1.6.3, Community Comparable Analysis, p. 5*

- Multi-jurisdictional requirements and cooperation
- Impacts of Government legislation
- Support services – dispatch, maintenance
- Service delivery models
- Current and future development impact on risks and response
- Community risk factors
- Apparatus and equipment requirements and inventories
- Building space requirements
- Staffing
- Administration
- Department structure, duties, and workload
- Bylaws, policies, and procedures
- Reporting structure and requirements
- Fire prevention & public education
- Community emergency management
- Training
- Succession planning

1.4 Fire and Emergency Services Master Planning Process

The following diagram illustrates the process we used to complete this plan and our recommendation to maintain it.

Figure 1: Master Planning Process



1.5 Standards and References

This plan considers the following references and standards:

- Alberta Occupational Health and Safety, 2017
- Firefighter Code of Practice
- Municipal Government Act, July 1, 2018
- National Fire Protection Association's (NFPA) Standards and Guidelines
- Alberta Building and Fire Codes, 2019
- Alberta Safety Codes Act, 2017
- Service provisions from similar communities

1.6 Consultative Process

1.6.1 Targeted Interviews

Targeted interviews were part of the data and information collection process. Participants were asked questions related to their areas of purview and expertise. An interview guide was used to conduct the interviews. The interview was used to promote an open discussion about the community, risks, general concerns related to the County, and CRFRS operations including strengths, weaknesses, opportunities, challenges, and anticipated changes.

Table 1: Targeted Interview List

No.	Name	Job Title	Community
1	Rick Emmons	CAO	Clearwater County
2	Tim Hoven	Reeve	Clearwater County
3	Jim Duncan	Councillor	Clearwater County
4	Cammie Laird	Councillor	Clearwater County
5	Theresa Lang	Councillor	Clearwater County
6	John Vandermeer	Councillor	Clearwater County
7	Daryl Lougheed	Councillor	Clearwater County
8	Michelle Swanson	Councillor	Clearwater County
9	Erik Hansen	Director, Public Works	Clearwater County
10	Christine Heggart	Director, Emergency & Legislative Services	Clearwater County
11	Keith McCrae	Director, Planning	Clearwater County
12	Murray Hagan	Director, of Corporate Services	Clearwater County
13	Sharla Spratt	Administrative Assistant	Clearwater County
14	Steve Debienne	Regional Fire Chief	Clearwater County
15	Shawn St. Peter	Deputy Fire Chief	Clearwater County

No.	Name	Job Title	Community
16	Evan Stewart	Assistant Fire Chief	Clearwater County
17	Ray Moller	Battalion Chief	Leslieville, Condor and Caroline (Station 10, 20, 30)
18	Tammy Burke	Mayor	Rocky Mountain House
19	Dave Auld	Councillor	Rocky Mountain House
20	Randy Brown	Councillor	Rocky Mountain House
21	Merrin Fraser	Councillor	Rocky Mountain House
22	Michelle Narang	Councillor	Rocky Mountain House
23	Dean Krause	CAO	Rocky Mountain House
24	Jared OpdenDries	Battalion Chief	Rocky Mountain House (Station 60)
25	Kris Heemeryck	Captain	Rocky Mountain House
26	Jennifer MacKinnon	Lieutenant	Rocky Mountain House
27	Sheldon Mehlhaff	Battalion Chief	Nordegg (Station 50)
28	Mike Benum	Lieutenant	Nordegg
29	Rob Simpson	Captain	Leslieville
30	Joe Friesen	Firefighter	Leslieville
31	Park Tyson	Senior Captain	Condor
32	Dean Townsend	Firefighter	Condor
33	Wayne McMullan	Lieutenant	Caroline
34	Yvonne Evans	Firefighter	Caroline

1.6.2 Online Firefighter Survey

To obtain balanced input, we also employed an online firefighter survey. Our survey methodology offers several unique benefits. First, it offers an opportunity to gather opinions from an entire group as opposed to a limited sample of opinions from a select few. The online survey also offers an extremely flexible approach to the collection of data as respondents can complete the survey questions when it is convenient for them. Additionally, the anonymity of participants is relatively easy to control and therefore may yield more candid and valid responses. Finally, surveys are also extremely time and cost-efficient methods to engage large groups while capturing extensive data.

1.6.3 Community Comparative Analysis

We conducted an industry peer comparative analysis for CRFRS. This has been proven as method of benchmarking the performance of departments to similar communities. These benchmarks include budgets, performance, effectiveness, and efficiencies. Although fire and emergency services ultimately have the same goal of protecting life and property, each community has its unique features in how to accomplish their goals. Our main criteria for the

comparative analysis are effective and efficiencies between the communities based on risk and mitigation.

1.7 Study Considerations

The following factors that affected both the assessment and effective mitigation of risk were considered and assessed:

Community-Specific Considerations

- Total area of review
- Population and future growth
- Community risk factors
- Community demographic information
- Development and Area Structure Plans
- Multi-jurisdictional requirements and cooperation
- Current and future development impact on risks and response
- Financial resources and constraints
- Impacts of Government legislation
- Bylaws affecting the emergency services
- Economic factors
- Tourism
- Construction
- Industrial activity
- Utilities
- Retail businesses and other services
- Agriculture
- Buildings and structures concentrating on high risk demands, including business, assembly occupancies, etc.
- Municipal Emergency Management Plans

Department-Specific Considerations

- Geographic and physical boundaries for response
- Fire service annual reports
- Fire service focused reports previously conducted
- Budgets – previous, current, and proposed
- Current staff rosters with qualifications
- Fire station locations and other infrastructure
- Support services – dispatch, maintenance
- Department structure, duties, and workload

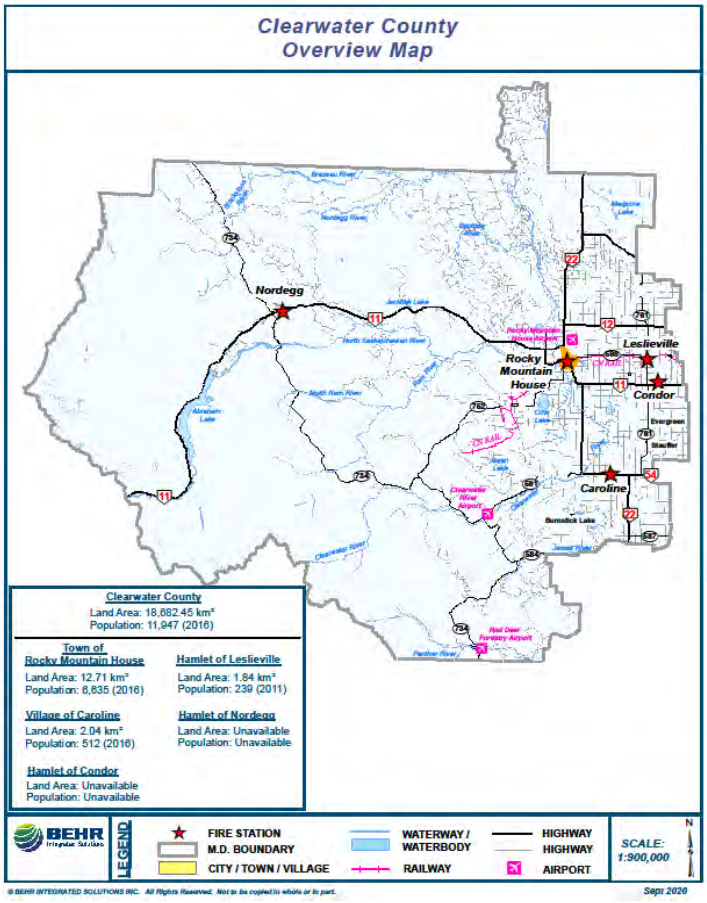
- Service delivery models
- Apparatus and equipment inventory, and future needs
- Building space requirements
- Operation staffing and administrative needs
- Long range planning
- Bylaw, policies, and procedures
- Reporting structure and requirements
- Fire prevention & public education
- Emergency core service response
- Health and wellness
- Training and recruitment records and standards
- Succession planning
- GIS mapping data
- Prevention programs such as Inspections, Education and Enforcement
- Records and data management
- Emergency services standard operating guidelines and procedures

SECTION 2
COMMUNITY PROFILE AND RISK OVERVIEW

2.1 Community Overview

Clearwater County is a municipal district located in west-central Alberta and makes up Alberta census District 9. The County has an area of 18,682 km^2 and a population of 11,947 (Statistics Canada, 2017 Census). The eastern boundary can be found approximately 50 kms west of Red Deer along Highway 11: the western boundary borders both Banff and Jasper National Parks. Highway 11 spans the County from east to west for approximately 200 kms, while Highway 22 travels across the County from north to south for approximately 90 kms.

Map 1: Clearwater County Overview



A large portion of the County west of Rocky Mountain House is mountainous and heavily forested and is part of the Alberta Forestry Protection. There are also numerous lakes and rivers across the County. Coupled together, the natural beauty and open access of region make it a favorite among visitors seeking any number of outdoor recreation activities.

With its population of 6,688 and area of 13.3 km^2, Rocky Mountain House is the largest municipality within the County (Government of Alberta, 2020). The population density of Rocky Mountain House is 503 people/km^2. It sits at the confluence of the Clearwater and North Saskatchewan rivers. A segment of the CN Railway runs through Leslieville and Rocky Mountain House, terminating a few kms west of that municipality.

2.2 Economy

The economy of Clearwater County is traditionally based on agriculture, the oil and gas industry, and forestry. Tourism has played an increasingly important role in the economy of this region. Rocky Mountain House and Caroline are the primary service centres for the County.

2.2.1 Economic Indicators

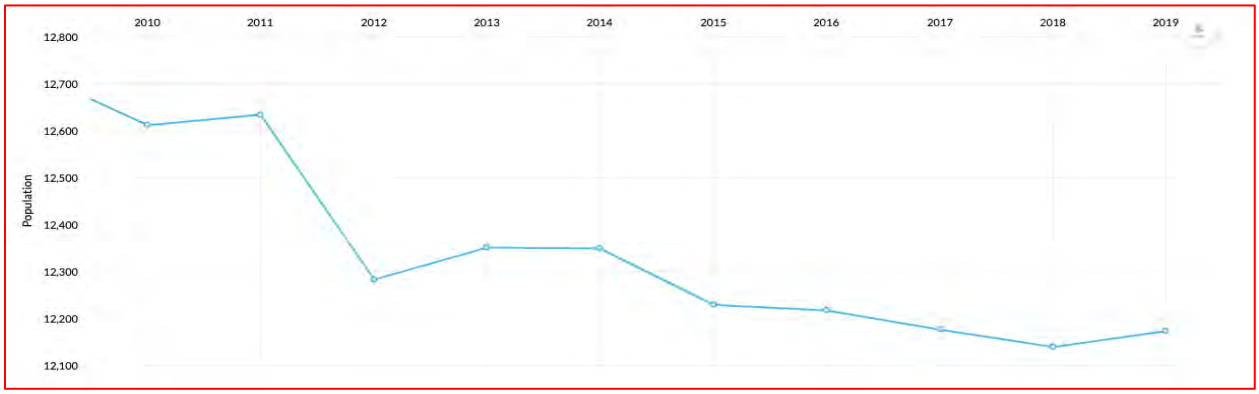
Clearwater County remains a largely natural-resource-based economy. Mining, quarrying and oil and gas and agriculture, forestry, fishing, and hunting are the leading industries. The construction industry, retail trade and health care and social assistance industries follow in their respective order (Statistics Canada, 2017). Trades, transport and equipment operators and related occupations is the leading type of occupation.

Natural resources, agriculture and related production are also in the leading five occupations (Statistics Canada, 2017). The largest private sector employers in the area involved in the oil and gas sectors including Pidherney's Inc. and Challand Pipeline Ltd. The largest public sector employers include Alberta Health Services, Alberta Agriculture and Forestry as well Alberta Environment and Parks.

2.3 Growth Projections

Clearwater County has a population of 12,173 in 2019. The County experienced a reduction in population over the course of the last decade (see Fig.2). Although there was a slight increase between 2018 and 2019 of 0.28%, future growth is expected to remain relatively flat.

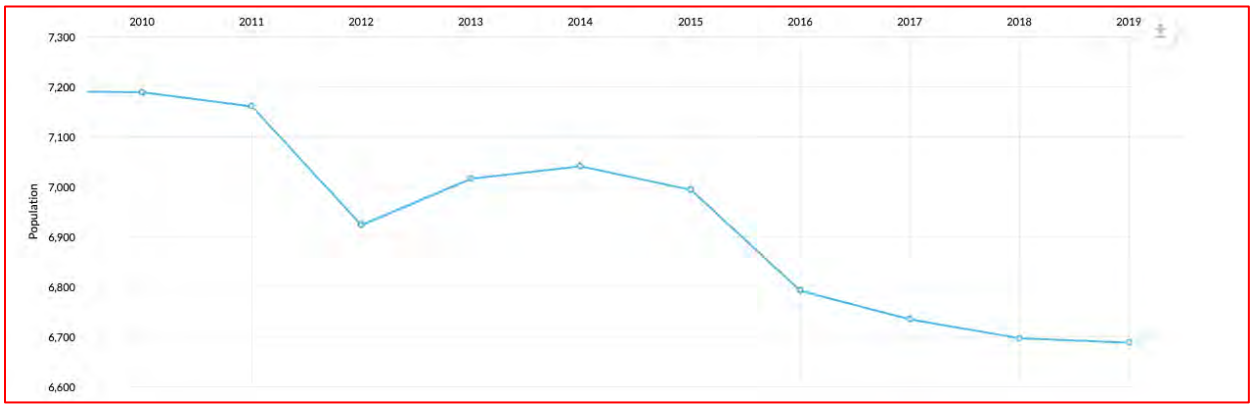
Figure 2: Clearwater County 10-Year Growth Trend[2]



Rocky Mountain House is the largest centre in the County boundary. The general downward trend in population in County was also experienced in Rocky Mountain House. In the last decade, the population decreased from 7,189 in 2010 to 6,688 in 2019 (see Fig. 3).

[2] *Alberta Government. 2020. As retrieved from https://regionaldashboard.alberta.ca/region/clearwater-county/population/#/?from=2010&to=2019 on August 8, 2020.*

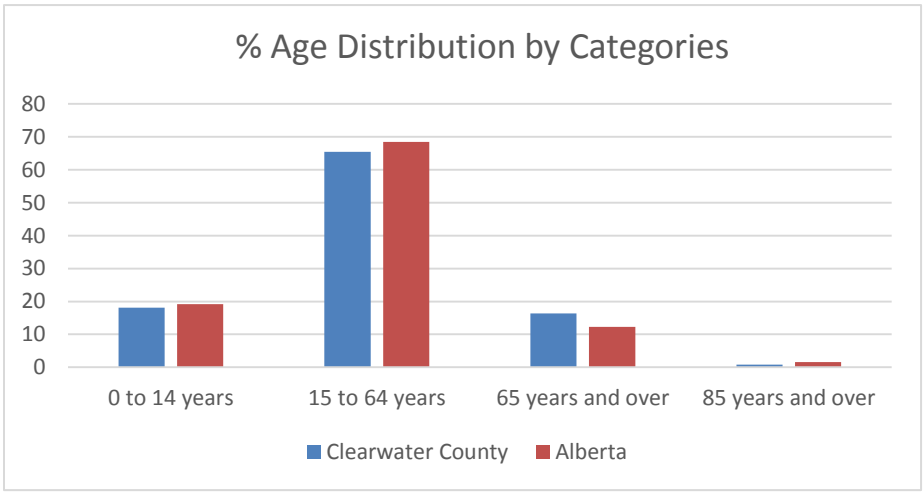
Figure 3: Rocky Mountain House 10-Year Growth Trend[3]



2.3.1 Community Demographics

In 2016, Clearwater County followed a similar distribution of residents' ages as was reported in Alberta. Most of the population, 65.5%, was between 15 and 64 years. The cluster of residents 65 years and older is slightly greater than that reported across the Alberta.

Figure 4: Percentage of Population by Age Categories[4]



As a result of the slightly larger group of seniors, the average and median ages of Clearwater County residents are slightly higher than those found across Alberta as well.

[3] *Alberta Government. 2020. As retrieved from https://regionaldashboard.alberta.ca/region/rocky-mountain-house/population/#/?from=2010&to=2019 on August 8, 2020.*

[4] *Statistics Canada. 2017. As retrieved from https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=4809002&Geo2=PR&Code2=48&SearchText=Clearwater%20County&SearchType=Begins&SearchPR=01&B1=All&GeoLevel=PR&GeoCode=4809002&TABID=1&type=0 on August 8, 2020.*

Table 2: Average and Median Ages[5]

Population	Clearwater County	Alberta
Average Age of Population	41.1	37.8
Median Age of Population	43.8	36.7

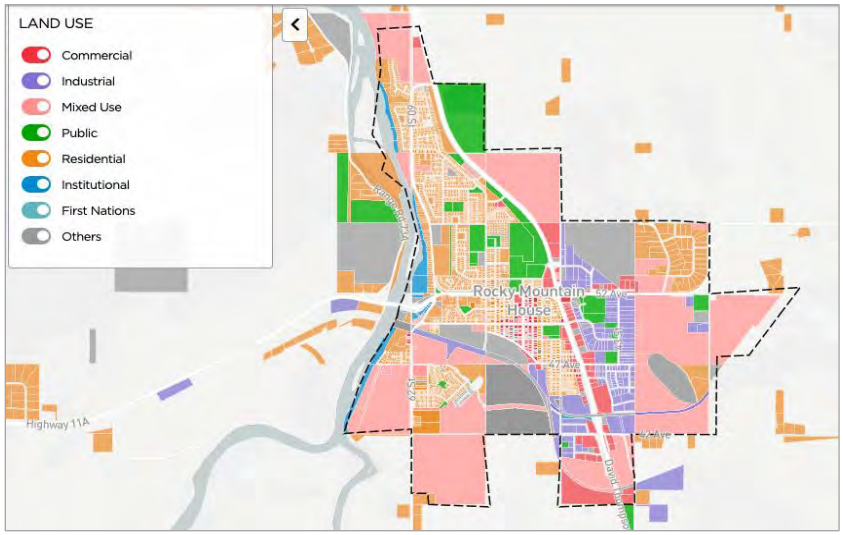
2.4 Community Planning and Development

Most of the development in Clearwater County is in the area immediately surrounding Rocky Mountain House and in the agricultural region to the east and south. The primary land use in the County is residential development. Of the 4,700 occupied private dwellings reported in the 2016 Census, 3,755 were single-detached homes. Another 800 of the properties were identified as moveable dwellings. There were no multi-story apartments reported.

There are pockets of industrial land uses in the County to the south and southwest of Rocky Mountain House.

The land use within Rocky Mountain House is more diverse. There are a mix of residential, industrial, commercial, mixed, and institutional uses in the County and Town's land use map (see Fig. 5). Of the 2,600 private dwellings identified in the 2016 Population Census, nearly 62% were single family residences. The Census identified 300 apartment units in buildings under five storeys and no apartment or condominium units in buildings above five storeys in height.

Map 2: Rocky Mountain House Land Use[6]

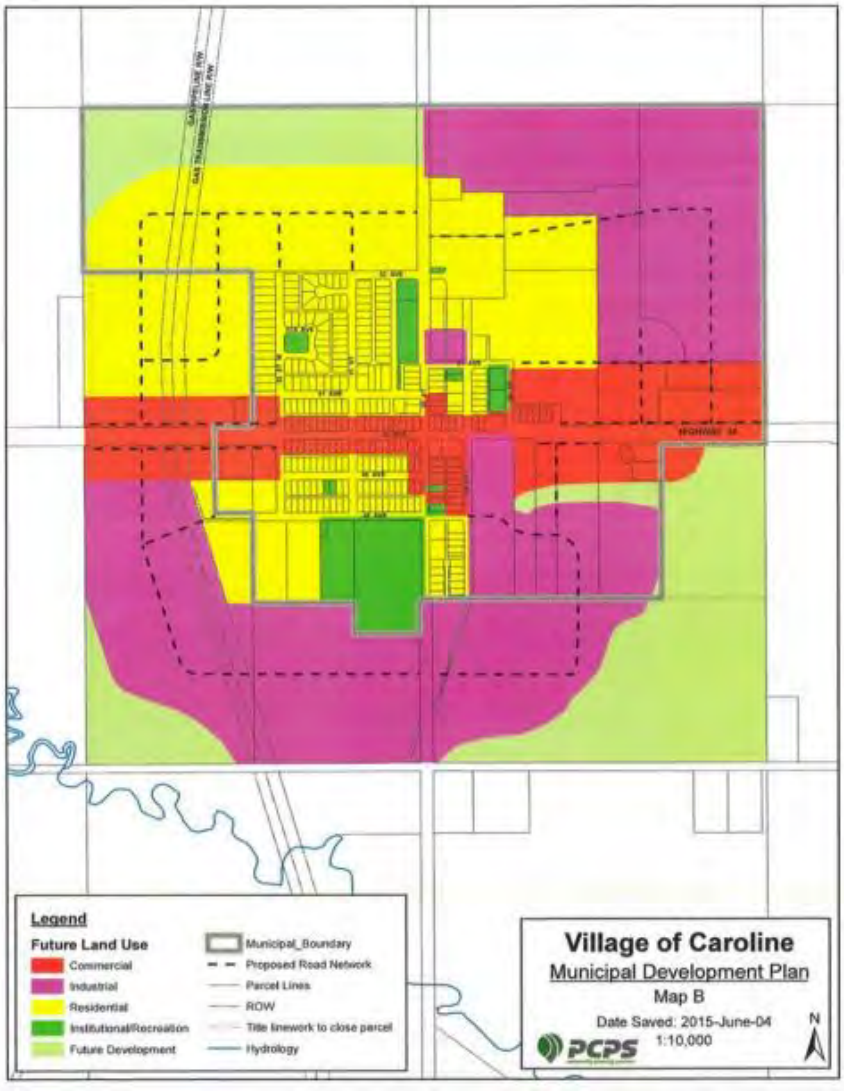


[5] *Statistics Canada. 2017. As retrieved from https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=4809002&Geo2=PR&Code2=48&SearchText=Clearwater%20County&SearchType=Begins&SearchPR=01&B1=All&GeoLevel=PR&GeoCode=4809002&TABID=1&type=0 on August 8, 2020.*

[6] *Rocky Mountain House and Clearwater County Land Use. 2020. As retrieved from https://strongertogether.ecdev.org/land-use on August 9, 2020.*

The land uses in Caroline include light industrial, residential, and commercial properties. The commercial properties straddle Highway 22, which travels through the centre of the village. There are also smaller areas of institutional/recreational use.

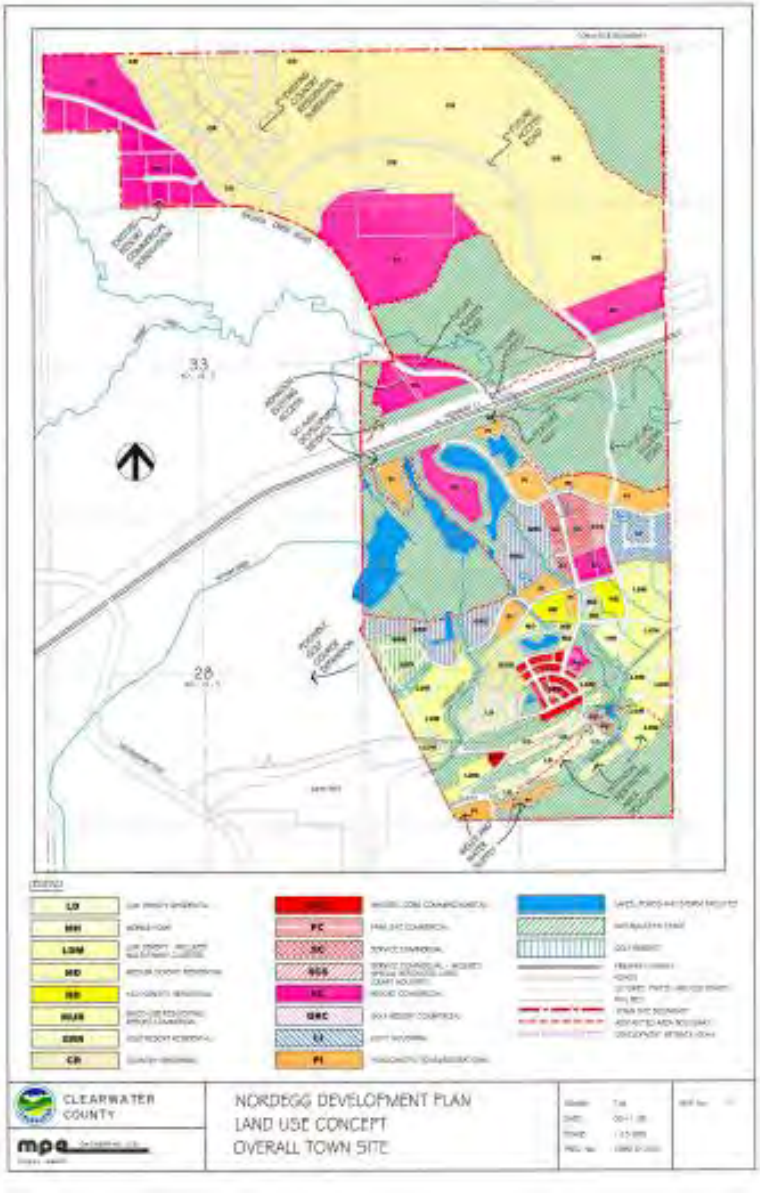
Map 3: Caroline Land Use[7]



In 1992, the Alberta government identified five development nodes along the David Thompson Corridor of Highway 11. Nordegg was one of the nodes, and the Nordegg Development Plan was initiated in 1999 and work continues in development and sales of acreage lots. As illustrated in Fig. 7, the land uses in Nordegg include low density residential with smaller pockets of resort commercial, historic core commercial and light industrial uses.

[7] *Village of Caroline. Municipal Development Plan. As retrieved from https://clearwater.municipalwebsites.ca/Editor/images/Documents/Planning%20and%20Development/Caroline_MDP_Background_Report.pdf on October 17, 2020.*

Map 4: Nordegg Land Use[8]



Section 2 provides an overview of the characteristics of Clearwater County, and the communities included in the fire master plan area. Some of the characteristics described above are linked to the community risks as they relate to the fire department's response. These risks will be discussed in further detail in the following section and include:

- Large and diverse regional response area
- Wildland urban interface fires

[8] *Clearwater County, 2020. Nordegg Development Plan. As retrieved from https://www.clearwatercounty.ca/Home/DownloadDocument?docId=f5cabe22-db02-4652-8fdf-037c45c92424 on October 17, 2020.*

- Transportation corridors and the potential of hazardous materials release and motor vehicle collisions
- Structure fires
- The impact of tourism and the seasonal increase in population
- Limitations of a primarily POC service delivery model

2.5 Community Risk Assessment

Every municipality has unique characteristics and challenges contributing to risk. Risk can be managed either through accepting the risk, insuring against damages, or investing in risk prevention and mitigation strategies. Local governments typically employ a combination of these approaches. In general, the risks and management strategies of a community are relative to a municipality's financial capacity, geography, population demographics, fixed assets, and critical infrastructure, as well as overall service delivery.

Risk Evaluation

- Identify the existing risks and assign a value to specific risks based on quantitative and qualitative data
- Identify fire department management strategies for high priority risks
- Predict future risks

This study provides a high-level community assessment of risk associated with fire and hazards, specifically focusing on the high priority risks managed with a fire department response. High priority risks are those associated with a high consequence or those that have moderate consequences and greater likelihood of occurring. The overall purpose of conducting a risk assessment is to establish an immediate, short-term, and long-range general strategy for the management these types of community risks.

Conducting a risk assessment is the first step towards establishing a strategic plan to manage community risks based upon local fire department response capabilities. The results are used to assist the municipality in making informed decisions regarding the allocation of limited fire prevention and fire response resources.

2.5.1 Factors Contributing to Risk

As mentioned, every municipality has unique challenges and characteristics contributing to the overall risk profile of the community. Some general examples of challenges that may impact community risks include:

- Fire/rescue service model and response capacity
- Population and demographics
- Population growth rate
- Industry types
- Economy
- Rate of development

- Transportation corridor types
- Typography
- Weather
- Historical response data

2.5.2 Risk Management

Image 1: Risk Management Cycle

All communities require a process to identify and actively manage high priority risks. As previously discussed, there are several approaches to managing risk. The focus of this report is to identify and discuss specific risks, and unique community characteristics that contribute to risk, typically managed through fire prevention or fire department response. Image 1. describes the risk management cycle. The fire step in the risk management process includes the assessment of the probability and consequence of specific risks. This assessment will identify key risks which are then evaluated against the current prevention or response strategy to identify potential service gaps. The third step in this cycle includes adjusting fire prevention and response service levels to manage the resources necessary to pre-emptively mitigate or respond as determined by approved service levels. The final step in cycle is to measure and report results to key policy makers. This cycle should be repeated periodically to address changes in the risk profile and make thoughtful and informed decisions regarding strategies to manage any changes.

In Canada, local governments are charged with delivering most of the fire and rescue response services for its citizens. Elected officials are the authority having jurisdiction (AHJ) who ultimately determine the level of service required to manage fire and rescue risks to an acceptable level within their jurisdiction. The challenge for elected officials lies in determining the best balance between investment in adequate emergency services and accepting a certain level of risk.

2.6 Risk Evaluation vs. Service Levels

The evaluation of fire or rescue risks considers both the probability and consequence of emergency event types. The probability of an event is quantified by analyzing historical, current, and projected data. The consequence of the event type or risk is based on an informed assessment of the potential impact on a community should the event occur.

Probability – The probability of a risk, or event type, is the determined likelihood that an event will occur within a given time. The probability is quantified by considering the frequency of event type data. An event that occurs daily is highly probable and therefore higher risk. An event that occurs only once in a century is assessed as a lower risk as it may never occur.

Consequence – There are three types of consequences when considering possible fire/rescue response requirements:

- Life-Safety Impact: Life-safety risk for victims and responding emergency personnel are the highest order of consequence when considering the risk associated with specific event types. Events with a high likelihood of injury/death occurring and even a moderate probability of occurring require close examination to ensure adequate resources required to safely rescue or protect the lives of occupants from life-threatening are accessible to respond. Incidents that risk life-safety include motor vehicle accidents, extreme weather, flooding, fire, release of hazardous materials, medical emergencies, and all types of rescue situations.
- Economic Impact: Events with high negative impact on the local economy are devastating to a municipality. For example, the fire loss of a large employer's property or key public infrastructure in smaller municipalities can be difficult to recover from. Therefore, providing adequate response capacity necessary to manage these types of events must be considered.
- Environmental Impact: Negative environmental consequences resulting in irreversible or long-term damage to the environment must also be considered in the analysis. Events with risk of negatively impacting water, soil and air quality are also likely to impact life safety as well as the economy and therefore must be considered.

Social and cultural impacts as experienced with the loss of historic buildings, recreation facilities or non-critical community infrastructure, are considered but do not typically affect how resources are deployed.

As discussed, the risk evaluation process is used to identify high priority risks and the appropriate risk management strategy. Where a fire department response is determined to be the most appropriate management strategy, adequate fire department service levels should be established to safely manage the risks. Elected officials are responsible for determining which services are delivered and setting service level goals. The service level goals determine the necessary concentration and distribution of either fire prevention or emergency response resources to safely manage the identified risks.

> ***Distribution*** *refers to the number of fixed resources, such as fire stations, and where they are placed throughout the community. Distribution varies depending on factors related to the number of incidents and types of calls for service in the defined area.*
>
> ***Concentration*** *refers to the assembling of resources, such as a specialized work force and equipment, needed to effectively respond to an incident in each area within the community. It must also identify the availability of additional response resources including the reliability and time of arrival of a secondary responding unit.*

The risk evaluation matrix (see Fig.5.) can be divided into four levels of risk based on the probability and consequence, each with specific implications for the concentration and distribution of resources. It is provided as a reference and context for use of the matrix to quantify fire response risks in your municipality. Different quadrants of the risk matrix need different response requirements.

Figure 5: Risk Evaluation Matrix

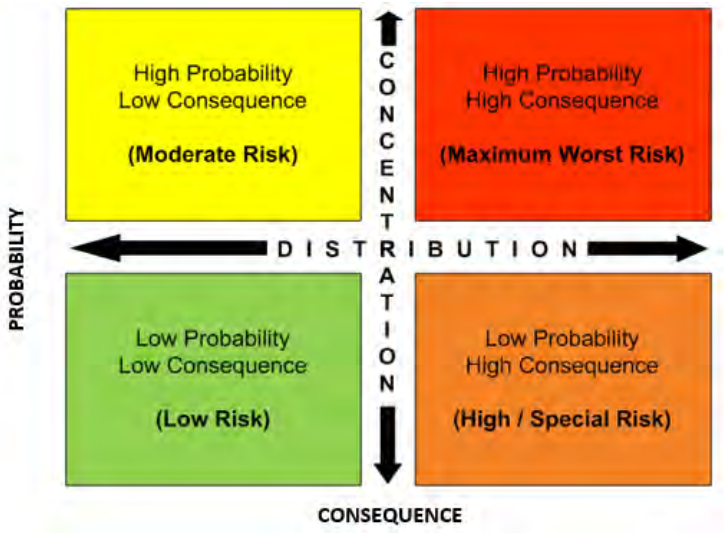


Table 3 offers examples of categories of types of structural fires and general hazards commonly found in communities. As described above, these risks are categorized by considering the probability and consequence of the fire or hazard. This qualitative analysis is based on experience and expertise, and should be completed with input from fire, building and emergency management officials. Every community will have a unique risk inventory contributing to its risk profile.

Table 3: Risk Inventory (Sample Only)

Low Risk = Low Probability and Low Consequence

This category is limited to areas or incidents having a low probability of fire risk and low consequence for the potential for loss of life or economic loss. Some low risks include:

- Outdoor fire pits
- Non-structure lightning strikes
- Vacant land
- Parks without structures
- Isolated structures such as sheds

Moderate Risk = High Probability and Low Consequence

Most responses fall under this category. Moderate risks include:

- Motor vehicle collisions
- Carbon monoxide detection (emergency medical co-response)
- Monitoring/local alarms
- Vehicle fires
- Dangerous goods incidents with small quantities of a known product (20 litres or less), outdoor odours (natural gas or unknown)
- Miscellaneous explosions
- Emergency standbys
- Smoke
- Odours
- Fires:
  - garbage
  - detached garages
  - single or multi-family residential fires
  - small non-residential buildings less than 600 square meters

High Risk = Low Probability and High Consequence

There are very few properties/responses that are considered high probability, high consequence. These properties are categorized as large properties, over 600 square meters, without adequate built-in fire protection systems, or that has large concentrations of people or has a significant impact on the local economy. High risks include:

- Commercial, industrial warehouse
- Dangerous goods incidents with large quantities of known products (75 litres or more), unknown products or large exposure
- Hospitals, care homes, institutions
- Derailments & transportation of dangerous goods
- Bulk fuel storage facility fire/explosion

Maximum Risk = High Probability and High Consequence

This category of risk can be generally categorized as properties over 600 square meters that have high economic value in the form of employment or are not easily replaceable, or natural disasters occurring in highly populated areas, creating high life and property loss potential and strains on the department and other agency resources. Damage to properties in this category could result in temporary job loss or permanent closure of the business. Such properties are highly regulated or possess built-in fire protection systems. Some maximum risks include:

- Wildland fires
- Weather related events (floods, tornadoes, serve storms etc.)
- Large vehicle accidents, pileups, derailments
- Quantities of known products (+500-1000 litres), indoor natural gas odour
- Explosions or substation electrical fires
- Confirmed natural gas leak

2.7 Structural Fire Risk Analysis

It is critical to use careful planning and consider alternative solutions when managing risk because the ability to increase the distribution of resources and add capacity is always limited. Spending large amounts of time and resources to manage a risk with low frequency/low consequences will have limited impact and make a minimal improvement to community safety. When planning for fire department response, the planning process includes a detailed review of the frequency of events and their potential consequence(s) to ensure prevention and response efforts maximize life safety and minimize negative consequences for high priority events.

This section describes how the risk of structure fires can be evaluated and how to use this information to inform the distribution and concentration of limited fire department resources.

Analyzing structural fire risk begins by developing an exhaustive inventory of existing building stock and monitoring changes to the inventory. This process should include staff from the planning and development departments, as well building and fire safety codes officers (SCO). This provides the fire SCOs with an opportunity to evaluate the Alberta Fire Code (AFC) requirements in the design, construction, and operation phases of the building.

The building inventory database becomes the foundation of assessing fire risk in the community. This inventory provides a count of all property types including single and multi-family residential, assembly (including schools, churches, hospitals, personal care homes, etc.), mercantile, commercial, and industrial properties.

Once the inventory is assembled, fire department response capability is measured against the identified property risks. This simple identification of the relatively high numbers of specific high-risk property types may identify gaps in the current response model, resulting in the reorganization or addition of fire department resources. As building stocks increase, fire departments should continue to monitor response capability and capacity to ensure service levels are maintained.

Fire departments should work with the planning department and building SCOs to develop a process of monitoring the addition of new buildings or significant changes to existing properties. The process can be used to involve them in the review of building plans and identify inspectable properties. It can also inform the development of fire response preplans to prepare fire responders for the specific hazards in high-risk structures. Table 4 provides an example of a smaller town. It is typical for single-family detached properties to make up the largest percentage of property types. As a result, fires in this type of moderate-risk structure are typically the most probable. However, the consequence of these types of fires is low relative to other residential properties, such as low-rise and high-rise buildings.

Table 4: Example of Basic Building Inventory by Property Type

Property Type	Count of Properties	% of Total Properties
Assembly (theatres, hotels convention centres, public facilities with high occupancies etc.)	40	2
Institutional (schools, hospitals, care homes etc.)	15	1
Residential -single-family	2000	86
Residential - multi-unit	40	2
Business and personal services	100	4
Mercantile	100	4
Industrial	20	1
Total	2,315	100

As new residential, commercial, and industrial buildings are added to the community building inventory, it is important that fire departments be involved early in the planning and development process. This provides an opportunity to review and evaluate the impact on services and provide recommendations that would serve to mitigate new risk.

A list of all properties based on property type in the fire response zones of the CRFRS was not available. A count of residential properties was captured in the 2016 Statistics Canada Census (see Table 4.) As a result, the analysis of this data is limited to identifying that a limited number of multi-unit Group C properties exist in Rocky Mountain House and Caroline. There are no apartment buildings with five storeys or more in the CRFRS fire protection area. As seen below, single-detached homes are the primary residential unit type. The are also a considerable number of mobile dwellings in these three municipalities. This data was not available for Nordegg, Condor or Leslieville.

Table 5: Residential Stock in CRFRS Fire Proteciton Area[9]

Housing Unit Counts	Clearwater County	Rocky Mountain House	Caroline
Single-detached house	3,755	1,600	115
Apartment in a building that has five or more storeys	0	0	0
Other attached dwelling	60	735	40
Semi-detached house	45	310	0
Row house	5	90	5
Apartment or flat in a duplex	0	35	20
Apartment in a building that has fewer than five storeys	0	300	5
Other, single-attached house	10	5	0
Mobile dwelling	880	255	80
Total Units of Housing Stock	4,700	2,600	235

The next step to completing the structural fire risk assessment is to focus on the property types which may pose specific hazards or high life-safety risks for fire responders and the community. Large-scale or special purpose buildings such as hospitals, schools, recreation centres, care homes and multi-unit residential structures present higher risks with respect to the potential consequences to life-safety and therefore must be constructed and operated in accordance with Alberta Building and Fire Codes. These Codes require specific life safety design features to be incorporated into the design of these properties, and those systems must be maintained for the life of the property.

By refining the focus on high-risk properties, inspectable properties are identified and a process for cyclical inspections of these life safety systems should be developed in policy. Further, fire response preplans should be completed for all high and extreme risk properties to identify the hazards, water supply, and provide a schematic of the building design.

Structural fire risk can be analyzed in greater detail by assigning fire risk values and developing risk scores specific property types in specific fire response areas, also known as demand zones. In municipalities with multiple demand zones, risk scores can used to highlight regional differences in the risk profile of a municipality and determine appropriate service levels for the region, and the concentration and distribution of fire resources.

Table 6. illustrates one approach to identifying differences in risk profiles for individual demand zones. This approach quantifies risk by developing risk scores for property types. The large and special use property types are assigned a value based on the qualitative assessment of risk and designated as low, moderate, high, and extreme risk properties. Values are assigned to each of

[9] *Statistics Canada. 2016. As retrieved from* ***https://www12.statcan.gc.ca/census-recensement/2016/*** *on August 2, 2020.*

those property types by designations, for example: low risk= 1; moderate risk=2; high risk =3; and extreme risk=4. A count of each of these properties is completed within in a specific demand zone. The value for each property type is multiplied by the number of those properties to develop a risk score for that property type within a demand zone. The risk scores for all the property types are added to produce an aggregate risk score for a specific demand zone.

Table 6: Example of Fire Risk Assessment by Property Type for a Demand Zone

Property Type	Qualitative Risk Assessment Low=1, Moderate=2 High=3, Extreme=4	Count Of Properties In Demand Zone	Risk Score
Assembly (theatres, hotels convention centres, public facilities with high occupancies etc.)	High (3)	40	120
Institutional (schools, hospitals, care homes)	High (3)	15	45
Residential (excluding single-family homes)	High (3)	30	90
Business and personal services	Moderate (2)	40	40
Mercantile	Moderate (2)	15	30
Industrial	Extreme (4)	5	20
Demand Zone Score			345

As discussed, this approach can be used to illustrate differences in risk across different demand zones. To further refine this approach, a weighted scale could be used to highlight specific types of high-risk properties. Additionally, individual properties could be considered uniquely as opposed to clustering properties by type. This approach requires more effort but does produce a more detailed assessment of risk.

The aggregated risk scores and specific high-risk properties can be plotted spatially with geographic information systems (GIS) tools. This approach, while detailed, provides fire department officials with a method of sharing a fire risk analyses with different stakeholders, from elected officials to the public, to illustrate fire risks in an easily understood format.

Observation #1: *The Government of Alberta (GoA) requires municipalities to regulate the development, construction, and fire protection requirements through the application of Alberta Building Code (ABC) and the Alberta Fire Code (AFC). The County is accredited for the Fire Discipline under the Alberta Fire Safety Codes Act. The County, Town and Village have recently renewed the Quality Management Plans and renewed in April 2020. Fire inspection frequency is limited to a request, complaint, or concern. There does not appear to be a process to develop or maintain a list of building stock in any of the three municipalities. High and extreme risk properties are not identified. There does not appear to be a system for reviewing new and existing properties. As a result, the CRFRS has limited access to adequate data to identify high-priority structure fire risks and develop risk management strategies. The County's Planning and Development Department provides CRFRS with development permits after they have been approved. This does not allow for a fire service review or input including confirmation of Fire Safety Code regulations. The Town provides CRFRS with business licence applications and does not provide development permits.*

Recommendation #1: Develop a comprehensive a structural risk inventory program and plan reviews for development applications, building permits and business licence reviews.

(Suggested completion: 24-36 months)

It is recommended that the Fire Chief work with Planning and Development staff to develop a process to inventory all existing and new properties, and that the building inventory be classified, documented, and maintained using the Alberta Building Code Major Occupancy Classification system. Monitoring changes in building stock allows the community to be well positioned to assess the impact of future growth and the changing risk profile of the community, adjusting the concentration and distribution of fire department resources as required. Further a comprehensive fire service review process for development applications, building permits and business licences be established prior to approval.

2.8 Community Risk Analysis Overview

The following section provides an overview of the unique characteristics, hazards, and risks in the County specifically that impact the fire department response. This study is not intended to be a comprehensive all-hazards risk and vulnerability assessment. The discussion provides additional context to assess fire department response capability by offering an assessment of some of the medium, high, and maximum risks identified in the interview process and analysis of fire department response data.

2.8.1 Large and Diverse Fire Department Response (Demand) Zone

One of the challenges for Clearwater County and the CRFRS is to provide fire, rescue, and first medical response services in an area of 18,691 km^2, with vastly different topography,

population density and land development. Theoretically, CRFRS has five response zones, or demand zones (NFPA 1720), centered around each of the five stations.

Specifically, the immediate demand zones fare as follows:

- Nordegg, Station 50, is sparsely populated, remote, isolated from the other demand zones, mountainous and heavily forested with several special risk industrial gas production facilities in the region.
- The central-eastern portion of the County contains the relatively densely populated urban centres of Rocky Mountain House, in the demand zone of Station 60, and Caroline, in the demand zone of Station 30, with mixed land use and a higher concentration of properties and development.
- The eastern portion of the County, within the demand zones of Leslieville, Stations 10, and Condor, Station 20, contains large areas of rural agriculture development which is less densely populated.
- Based on these different characteristics it is reasonable to consider providing different fire and rescue services, as well as service levels, to manage the unique risks found in the varying demand zones. The structural fire risks and the differing hazards within each demand zone should be analyzed using the risk matrix methodology. This process should identify high, extreme, and unique risks in these demand zones. As a result, the types and service levels necessary to manage these risks may differ across the regions of the County.

Observation #2: *As previously discussed, the data regarding building stock and specific properties is limited. Further, the risks and characteristics of the large response area covered by CRFRS differ in the demand zones of the five stations. One of the challenges the County has in providing services is to strike the balance between standardization of services and service levels and addressing the unique risks in the varying regions across the County.*

A standards of cover policy identifies high and extreme risks in a community and measures the current performance of the fire service to ensure these risks are managed safely. This policy is used to define services, service levels and outline performance reporting requirements. Where service gaps are identified, the analysis of the unique and common risks in specific demand provide elected officials with the information required to make informed service level decisions. This information can be used to identify performance reporting requirements. Appropriate levels of performance reports can be shared with key stakeholders and inform the public.

One of the common themes in the interviews was a lack of public understanding of the general operations of the CRFRS and the lack of information flowing back to key stakeholders. The information gathered in the standards of cover process can be shared both at the senior administrative and elected official level. This can facilitate a purposeful and informed decision-making framework for both these officials regarding the need for specific services, setting service levels, allocating funding, and establishing performance goals for the CRFRS.

In the absence of regular performance reporting, not all municipal partners or citizens have a clear understanding of the services and service levels of the CRFRS. Once completed, a standards of cover policy may be shared with the public to provide clarity with respect to services provided, service level expectations.

> ***Recommendation #2: Undertake a comprehensive risk analysis of the individual station demand zones and develop a standard of cover to effectively manage identified risks for each***
>
> *(Suggested completion: 24-36 months)*
>
> *It is recommended that CRFRS undertake the development of a standards of cover for all demand zones within the County.*
>
> *A standards of cover policy offers several benefits to the operation and governance of the CRFRS. A comprehensive risk analysis completed at the level of individual demand zones would identify all high, extreme, and unique risks within the different demand zones. It also involves a complete review of existing services and service levels, standard operating guidelines and policies, a review of fire department resource distribution and concentration based on regional risk factors, and fire department performance measurement and reporting.*

2.8.2 Multiple Transportation Corridors

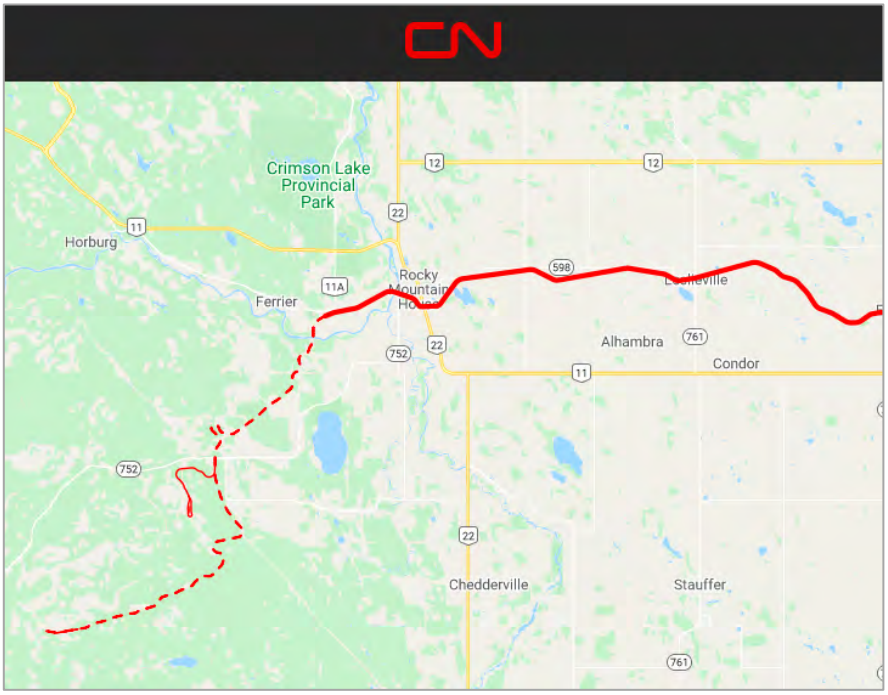
Several major highways as well as a CN rail line travel through Clearwater County. Highway 22 traverses the County in a north to south orientation and travels through the centres of Caroline and Rocky Mountain House. Highways 53, 54 and 12 enter the County in the east, intersecting with Highway 22. Highway 11, or the David Thompson Highway, travels east to west across the County. This highway is a heavily traveled route for commercial traffic as well as visitors entering or leaving the popular David Thompson corridor. Further, Highway 11 travels across the North Saskatchewan River north of Rocky Mountain House.

The primary CRFRS response risk associated with these heavily traveled roadways is an increasing number of motor vehicle collisions (MVCs) as well as an increased probability for a collision involving many victims, or a mass casualty incident (MCI). MVCs are typically a moderate risk, low in consequence but relatively probable across the County. From 2017 to 2019, responses to vehicle collisions represented more than 20% of the total number of responses reported by CRFRS. While events involving multiple casualties are less frequent, these events are considered a maximum risk as the consequences of these types of events are considerably greater than smaller MVCs and can overwhelm the fire rescue and EMS response resources of smaller communities.

Dangerous goods and hazardous materials are routinely transported through Clearwater County on roadways and rail lines. Although the probability is relatively low, an incident involving the release of hazardous materials in a populated area such Rocky Mountain House could have devastating life-safety, economic and environmental consequences. Additionally, the presence of sour gas and natural gas pipelines, as well as processing facilities compound the risk of a release of hazardous materials in Clearwater County. Depending on the magnitude of the release and risk to life safety, an event involving the release of a hazardous material may be categorized as high or maximum risks (see Table 6.).

In addition to roadways, CN operates a rail line traveling east to west across the County that terminates southwest of Rocky Mountain House (see Fig. 6). The line runs through Leslieville and the southern portion of Rocky Mountain House, where it crosses both Highway 22 and the North Saskatchewan River. This segment of rail operated by CN is used to transport several hazardous materials such as molten sulphur and liquid propane gas.

Figure 6: CN Rail Route in Clearwater County[10]



Controlling a release of hazardous materials often requires highly specialized training and equipment. Although the probability of an incident of this type is somewhat higher for CRFRS given the quantities of hazardous materials being transported by road, rail and pipeline, the resources required to safely manage these events exceed the required competencies and capacity in all but the largest communities in Alberta. As a result, fire departments from smaller and mid-sized municipalities typically only provide an initial response to identify the issue and initiate an evacuation process as required. In most cases, significant releases almost always require support from agencies able to maintain specialized competencies and equipment to completely control the release.

[10] *CN Rail. 2020. As retrieved from https://cnebusiness.geomapguide.ca/ on August 22, 2020.*

Observation #3: *Dangerous goods and hazardous materials are transported by road and rail through Clearwater County, many traveling through the centres of Rocky Mountain House and Caroline. No dangerous goods routes are identified. The quantities and types of materials does not appear to be monitored. There are several major intersecting highways and rail crossings which increase the risk of collisions involving hazardous materials. A major hazardous materials release because of a collision or derailment near populated regions is assessed as a low probability, high consequence event that could result in a high to extreme life-safety risk.*

Recommendation #3: Explore the establishment of a dangerous goods route within the response zones

(Suggested completion: 24-36 months)

It is recommended that the County explores the establishment of dangerous goods transportation protocols within the region. If a reasonable alternative transportation route can be established, transportation of dangerous goods should be limited to a specific route, or restricted to certain hours of the day, avoiding the centres of Rocky Mountain House and Caroline to minimize the life-safety risk. The process for establishing dangerous goods routes is involved and will impact several stakeholders. Understanding the type and quantities of hazardous materials traveling through the municipalities is necessary to fully understand the level of risk. The GoA publication from Alberta EDGE, Guidelines for Establishment of Dangerous Goods Routes in Alberta Municipalities, June 2018, provides an excellent understanding of the process and challenges in considering this option. This recommendation will reduce the risk but does come at the expense of managing and enforcing the change.

2.8.3 Wildland Urban Interface Fires

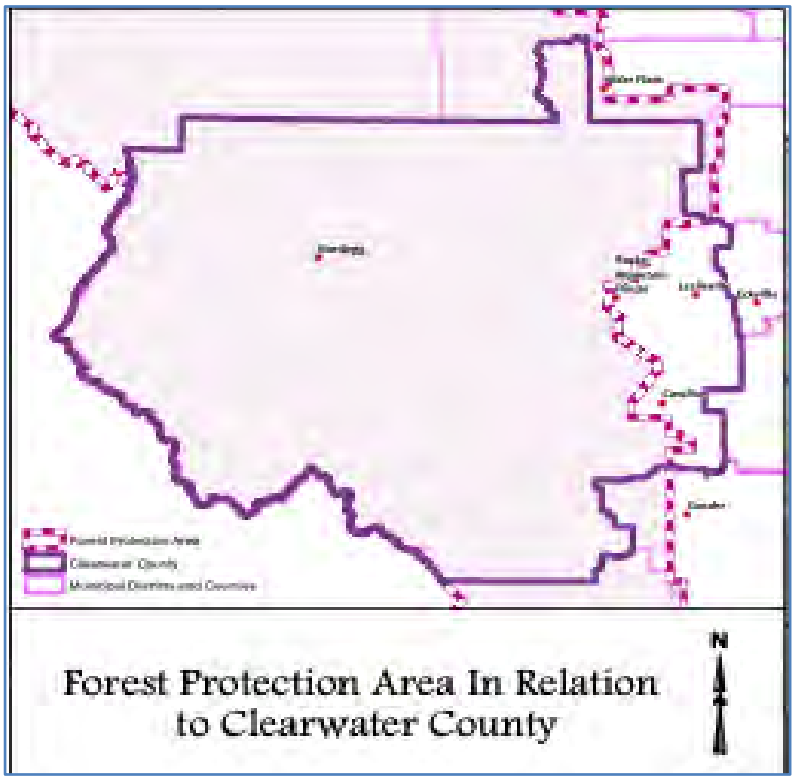
Residential, agricultural, and industrial development in forested areas continues to increase, and as a result, the areas of development in previously forested regions has increased the wildland urban interface area in Alberta. Development in and around Nordegg and the western boundaries of Rocky Mountain House is bordered by forest. In heavily forested regions, the probability of wildland urban interface fires is relatively high, and the consequence can vary from low to extreme.

Clearwater County and Town of Rocky Mountain House have completed extensive wildland urban interface and structure fire planning. County staff have worked with the GoA Agriculture and Forestry representatives to develop detailed risk assessments and wildfire management strategies across the County. In addition, the 2020 Town of Rocky Mountain House Wildfire Mitigation Strategy identifies the major wildfire risks within a 10 km area surrounding the town. The Strategy identifies several key elements of wildfire prevention including vegetation management in high risk areas, public education, developing interagency cooperation plans, legislative and planning controls, and emergency management planning initiatives. These planning efforts reflect the concern regarding

wildland urban interface fires within the response zone of CRFRS and Clearwater County. Depending on type and extent of properties involved in this type of event, the event is classified as a high to maximum risk.

A large wildland fire impinging on a developed area will quickly outstrip the resources of most fire departments. From 2017-2020, wildland and brush fires make up approximately 10% of CRFRS responses. Mutual aid agreements with the Agriculture and Forestry and other regional partners are current. The majority of Clearwater County is in the Forest Protection Area (see Fig. 10 below) and under the jurisdiction of the Ministry of Agriculture and Forestry, with a Wildland Forest Office and wildfire firefighting resources located in Rocky Mountain House and the County. The County has a current mutual aid agreement and response plan developed with Alberta Agriculture and Forestry. Further, CRFRS employs wildland urban interface firefighters under a provincial grant program which provided funding for 18 months, set to expire in January 2021. As a result, the CRFRS is currently better positioned to manage the wildland urban interface fires than most municipalities of similar size. Following the expiration of the grant funding, the need for additional WUI firefighting resources could be evaluated.

Figure 7: Clearwater County Forestry Protection Area[11]



[11] *Clearwater County. 2020. As retrieved from http://clearwater.municipalwebsites.ca/Editor/images/Documents/CRFRS/ClearwaterCounty_FPABoundaries_23april20.pdf on August 23, 2020.*

2.8.4 Increasing Tourist Activity

Clearwater County, specifically the David Thompson Corridor, is a four-season tourist destination. Tourism is a growing industry in Clearwater County of economic importance. Tourism can be a fire department response risk if seasonal increases in activity and population are significant enough to increase demand for fire and rescue services. The increase in population in remote areas and the accompanying increase in recreational activities will have an impact on emergency service resources, including CRFRS, EMS, police and search and rescue agencies. As this trend continues, CRFRS is likely to experience increasing responses for medical assistance, MVCs and front country rescue response and support. Further, with more campers using the backcountry the risk of wildfire increases. While the dramatic increase in tourism experienced this spring and summer may be unique, it has demonstrated the increase pressure it creates as the number of rescue operations in 2020 have already exceeded the annual number of rescue responses by Rocky Mountain House, Station 60 and Nordegg, Station 50.

2.8.5 Limitations of the Paid-On-Call Staffing Model

The CRFRS operates on a paid-on-call (POC) staffing model. While very efficient, these models are not without challenges. The number of firefighters responding to emergencies can be unpredictable. Training commitments can conflict with personal commitments making it difficult to maintain required competencies. Turnover of POC firefighters can be high and persistent, increasing recruitment and training costs. Recruitment can be a challenge. Finally, fewer POC firefighters can maintain long-term commitments which limits the number of senior staff with experience and leadership skills.

The POC firefighters interviewed and survey respondents are clearly very proud and committed members. While some of the members of the CRFRS suggested completing all training requirements was a challenge, the majority suggested training demands were manageable. When asked whether the POC staffing model was sustainable, both interview and survey participants strongly supported this model. As a result, the CRFRS is generally well positioned to maintain the POC model in the foreseeable future.

Observation #4: *Staffing shortfalls were identified by interview and survey participants, particularly in Nordegg, at Station 50. Nordegg is a small community with a limited pool of potential firefighter candidates. The 2020 recruitment efforts were able to draw an additional three potential candidates from this region. As a result, the availability of trained firefighters and the ability to recruit new firefighters in this area is limited. However, maintaining a fire service without the staff to respond creates a false sense of security and does not manage the known risks in this demand zone.*

Additionally, Station 50 is in an isolated location. The nearest CRFRS resources are in Rocky Mountain House, nearly an hour away. Despite the co-response coming from Rocky Mountain House, firefighters responding to fire or rescue events will be left to manage the event for nearly an hour before additional resources arrive. Responding to rescue events on roadways or fire events without an effective response force increases the risk of injury to firefighters.

At approximately 40 responses per year, the emergency events occurring in the response zone of Station 50 and the overall risk remains relatively low. In a primarily POC fire department, placing permanent full-time staffing in Station 50 is cost prohibitive. However, service demand is linked to tourism, which is increasing in this region, with seasonal peaks in summer months. In the interviews, it was suggested that permanent and part-time residents expect a reasonable emergency response. It is understood that there will always be a response to an emergency although it may originate from the assisting station (Station 60) due to the unavailability of Station 50 POCs. The results of this will be extended response times.

Recommendation #4: Engage the residents of Nordegg to support innovative approaches to sustain the community's fire/rescue response

(Suggested completion: 24-36 months)

Clearwater County staff and the residents of Nordegg must work together to find a reasonable solution to the current shortfall in fire/rescue response occurring in Nordegg. Potential solutions must balance the risks to the community and first responders with the cost of implementation and the relatively low demand for fire/rescue services throughout the year. Potential solutions might include:

- *An increase in local participation in the CRFRS POC system*
- *Incent current POC members of the CRFRS from other communities to relocate for periods of time during the peak season (could include improved housing arrangements, implementing an on-call stipend or covering member's expenses while on-call)*
- *Explore a firefighter work experience program (with the caveat that students must be supervised)*

This data is critical in understanding the response capability of Station 50 to complete a SOC policy. This data would also assist in heightening the awareness of this service gap. It would support efforts to reengage the citizens of Nordegg. The simplest long-term solution is to have an adequate number of firefighters available to generate a reliable response. It could also inform decisions regarding fire department services and service levels from Station 50. Given the risk factors previously discussed and the isolated location of this community, service complete

Medium to longer-term strategies for consideration include:

- Adjusting service levels to include paid seasonal firefighters in Nordegg
- Develop innovative approaches to support current POC CRFRS staff, and possibly families, residing in or near Station 50 during the summer months
- Reduction of service where Station 50 is only operated on weekends or when adequate staffing is available

2.8.6 Severe Weather Events

Clearwater County experiences significant risks from severe weather events. As identified in hazard risk and vulnerability assessments completed by Clearwater County, Town of Rocky Mountain House and Village of Caroline, these municipalities all report high wind events in their top ten community risks. High winds can cause significant property damage and interruption to critical infrastructure such as power distribution systems, communication systems and transportation corridors. Tornados and microburst winds in populated areas may pose a considerable threat to life-safety. Further, severe winds can accelerate fire spread should fire occur concurrently.

Additionally, the County has experienced numerous flooding events on its waterways. Flooding events are typically not high life-safety events in Alberta but pose significant risks to critical infrastructure.

Extreme weather events are often protracted and impact large areas. These events require a multi-agency response coordinated by emergency operations centre staff. As a result, floods and high wind events can draw down the response capacity of a fire departments. This is particularly true for POC fire departments, where firefighters have other obligations to manage and it is a challenge to sustain a multiple-day response. The CRFRS and Clearwater County response plans should anticipate this limitation.

SECTION 3
DEPARTMENT PROFILE

3.1 Department Overview

Clearwater Regional Fire Rescue Services was formed in 1999 bringing together Clearwater County, the Town of Rocky Mountain House, and the Village of Caroline fire departments.

The men and women of this service have dedicated their time and energy to faithfully serve their communities by using training, technology, and commitment in providing exceptional service to the citizens and visitors to the County. CRFRS is a proud department that values their past, embraces the present and looks forward to the challenges of the future.

Statistics from the 2016 Clearwater County Census show a population of 11,947 which is a decrease of 2.7% over the 2011 population. There is little anticipated growth in the area for the next few years. The County however has seen an increased influx of recreational traffic into the region which adds to the potential for increased fire service and rescue demand.

With the consideration of the stable population within the region, there remains challenges for existing services to keep pace with the growth in tourism activity. The fire service is particularly challenged to continue to provide the level of service required because of increased call volumes, increased complexity, and increased geographical coverage. This can be further exacerbated as these increasing service demands place pressure on a volunteer/paid-on-call fire service and their resources.

CRFRS responds out of five geographically located stations throughout the County plus one separate Headquarters. CRFRS is considered a primarily POC composite fire service relying on minimal full-time staff supported by POC firefighters who respond from their respective dwellings or place of employment when needed.

CRFRS covers an area of 18, 682 square kilometers with their firefighters typically responding out of their closest assigned fire station. The demographics vary significantly throughout the region and results in the remote fire stations struggling to recruit and maintain a healthy number of firefighters.

Just as most fire services throughout Canada have evolved, CRFRS has adapted to the increasing and diverse service needs of the community through increased specialized training and equipment. Today's CRFRS delivers emergency response to much more than the traditional fire response. This includes a competent response to motor vehicle collisions, medical first response, dangerous goods spills/releases, WUI fires, highway, and water rescue events. Along with emergency response, CRFRS performs fire inspections, pre-fire planning, public education, and fire prevention public service, as well as other charitable activities within their community.

CRFRS has mutual aid agreements for emergency response and/or emergency management through a contractual arrangement between Clearwater County and several neighboring Counties and Towns. Emergency dispatch services are provided to CRFRS through Red Deer 911 Emergency Communications Centre (Public Safety Answering Point (PSAP).

While volunteer/paid-on-call fire services have long-valued service histories with their respective communities throughout North America, there may be a point that necessitates a transition toward a hybrid full-time/volunteer staffing model, typically referred to as a composite service delivery model. CRFRS is not currently, nor in the foreseeable future at that point providing the reliance on volunteer POC firefighters remain sustainable for the region.

3.1.1 Mission, Vision and Values

Mission

The mission of Clearwater Regional Fire Rescue Services will be to protect lives, property, and the environment by providing coordinated, competent, and cost-effective emergency response and life safety services to our defined service level.

Vision

Clearwater Regional Fire Rescue Services will be known for our professionalism, regional strength, and our hometown attentiveness as we provide fire protection and life services to Clearwater County, the Town of Rocky Mountain House, the Village of Caroline and the Summer Village of Burnstick Lake.

Values

Our values of accountability, integrity, service, and community guide our actions and decision making as the Regional Fire Rescue Service.

3.2 Human Resources

The heart of any organization is its people. CRFRS is classified as a composite paid-on-call service with minimal full-time staff, supplemented by POC firefighters who together can provide fire/rescue, emergency medical response, as well as responding to other emergency situations in either a lead or support role.

The Fire Chief, Deputy Fire Chief and Assistant Fire Chiefs are primarily responsible for leadership, administration, management oversight and operational obligations for CRFRS. The Chief Officers are currently on-call one week every three weeks rotation and are required to monitor responses and respond to significant events if required. The 87 current firefighters (officers and firefighters) respond as required based on the type and geographic area of the request for service.

The POC firefighters are expected to respond when available any time of the day or night. They are remunerated for emergency response and training sessions.

All staff are required to live in proximity of their respective fire station; however, many have their regular work obligations out of the area which provides challenges for POC firefighter response, particularly during regular weekday work hours.

3.2.1 CRFRS Committees

Internal committees that involve front line staff together with administration are an extremely valuable resource for the effective and efficient operation of an organization. This is even more important where employees are spread across different worksites as is the case with CRFRS which maintains five fire stations and separate headquarters involving primarily paid-on call staff.

Typical internal committees that are effective in a fire department are the ones that include:

- A comprehensive term of reference and guidelines, with detailed roles and responsibilities of the committee and of each member including:
  - Purpose of the committee – advisory in nature to whom
  - Code of conduct
  - Composition of committee
  - Selection process for chairperson/s
  - Schedule and timelines of meetings
  - Attendance expectations
  - Quorum requirements
  - Decision making process
  - Minutes- taking and adoption
  - Action plans with identified individual accountabilities
  - Tracking of assigned tasks
  - Other elements that facilitate an effective committee environment
- Strong employee representation through selection by the employees
- Administrative representation with knowledge in committee responsibility

These committees need to be cooperative in nature and focused on important aspects for the safe and effective delivery of service. Committees are typically standing, adhoc, or sub-committees as structured by the Fire Chief.

CRFRS currently has several internal employee/employer committees and sub-committees. Meetings are usually conducted in the evenings to accommodate the POC firefighters.

CRFRS standing committees include:

- <u>Member Engagement Committee</u>

  This committee was formed to allow an internal communication process for employees, CRFRS administration and Clearwater County staff to discuss and work through issues. This committee by structure involves persons outside of the CRFRS including the CAO and elected officials.

- Apparatus and Equipment Committee

  This committee was formed to allow CRFRS administration and firefighters along with fleet services personnel to discuss and provide recommendations on CRFRS fleet needs.

- Life Safety Committee

  This committee was formed to establish a system for a regional approach to life safety education and public events.

- Apparel Committee

  This committee was formed to a regional approach to CRFRS uniform and non-uniform apparel.

Clearwater County Committees with CRFRS Involvement:

- Occupational Health and Safety

  This is a Clearwater internal occupational health and wellness committee with a single CRFRS representative. CRFRS OHS issues are expected to be discussed and resolved at this level.

Observation #5: *It is important to respect the time and commitment that is required by all the members of each committee. Of particular concern is the time required by the CRFRS administration team which requires participation outside of their normal work hours. Feedback from interviews have indicated that committee meetings typically take two to three hours to complete.*

Many of the firefighters interviewed, some of whom were existing committee members, expressed concern and frustration over the effectiveness of these committees. This sentiment was also apparent by some firefighters participating in the survey. There has been an expectation that these committees are decision making bodies rather than recommendation-based committees. It was suggested through the interviews that items agreed to in these committees were not considered final decisions.

While committees can be very beneficial in providing frontline input to operational decisions there is a risk that expectations of members are not met, leading to frustration and resentment that can negatively affect the entire service, thereby defeating the purpose of these committees.

As the CRFRS is not unionized, it does not have a typical labour-management meeting structured where employee/management issues can be heard and resolved. Rather, the CRFRS relies on their Membership Engagement Committee to address operational concerns with the chief officers, which may unnecessarily involve outside influences in operational decision-making. Further, this approach may invite back-door type of issue resolution which undermines managerial authority and further frustrates issue resolution.

The Clearwater County OHS Committee does not appear to have sufficient representation for the needs of the CRFRS firefighters. An internal OHS committee should be implemented for CRFRS.

The Apparatus and Equipment, Apparel and Life-Safety Committees serve a purpose within the CRFRS but may be better served as adjunct or sub-committees to a main employee/management committee.

Recommendation #5: Re-evaluate internal CRFRS committees

(Suggested completion: 6-12 months)

CRFRS has an immediate need to evaluate their existing employee/employer committees. This may require a total restructure of internal committees with new names, terms of reference and membership with the goal of improving committee effectiveness.

Proper minute taking with agenda items and actions are to be followed. These minutes should be distributed to each worksite in a timely manner. Specifically, the following is recommended:

- *Develop an over-arching CRFRS Employee/Management Committee*
- *Develop a CRFRS OHS committee*
- *Structure the Apparatus and Equipment, Apparel and Life Safety committees as adhoc or sub-committees that are given specific mandates as required or directed by the Fire Chief*

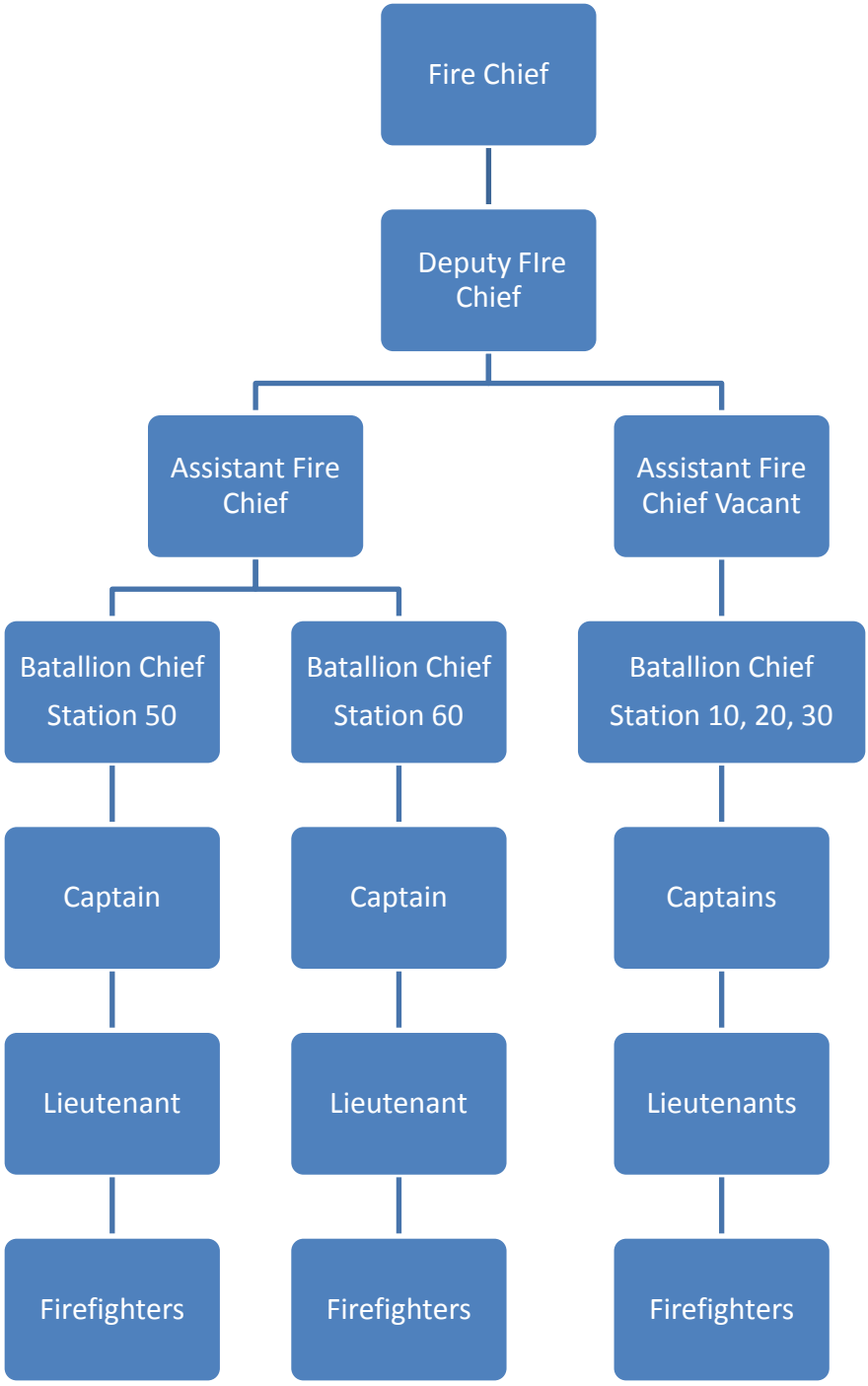
3.2.2 Staffing Complement

Clearwater Regional Fire Rescue Services currently consists of the following staff to deliver emergency services:

- One Fire Chief – (permanent full-time)
- One Deputy Chief (permanent full-time)
- Two Assistant Fire Chiefs (permanent full-time) * one vacant at time of report*
- Three Battalion Chiefs (volunteer POC)
- One Senior Captain (volunteer POC)
- Six Captain Firefighters (volunteer POC)
- Ten Lieutenant Firefighters (volunteer POC)
- 52 Firefighters (volunteer POC)
- 15 Recruit Firefighters (volunteer POC)
- 2 Administration support (full-time)

Note: *CRFRS staffing levels of paid-on-call firefighters vary given the recruitment and retention challenges with volunteer/POC firefighters.*

Image 2: CRFRS Organizational Structure (2020)



3.2.3 Department Leadership and Management

Effective and efficient leadership and management starts at the top to guide an organization towards success. Elected officials are relentlessly looking for ways to effectively manage and avoid costs while still increasing value in the delivery of services for their citizens. This environment has generated the need for communities to adopt more business-like approaches for delivering public safety services. Modern emergency services now require the development of business approaches such as:

- Conducting regular market (external) analysis
- Developing performance measures and objectives for core services including emergency response, fire prevention, public education and health and safety
- Regularly monitoring and reviewing performance to determine effectiveness
- Ensuring value for service

An effective organizational structure must promote and support strong, effective leadership, sound business management and continuity, and effective communication with opportunities for staff development. In some cases, this may require a shift from the historical approach of maintaining current systems to a focus on creating a future for the department that is responsive to change and is sustainable and efficient.

Emergency service leaders have also had to adopt a more business-like approach to leading and managing their departments. Along with their municipality's senior administration, they need to be proactive and examine all aspects of their service delivery systems to look for innovative efficiencies and effectiveness.

3.2.4 CRFRS Administration Positions

3.2.4.1 Fire Chief

This position is a senior administrative employee of Clearwater County who leads, directs, and manages fire rescue services in support of the communities that encompass the residents of Clearwater County, the Town of Rocky Mountain House, and the Village of Caroline.

This position is responsible for long range planning, daily operations and administration of the volunteer POC fire stations associated with the communities served by the CRFRS.

This position directs and effectively manages all aspects of the CRFRS in close collaboration with the Clearwater County Emergency and Legislative Department Director.

This position is identified as necessary to be on-call which is rotated among the Administrative positions of CRFRs.

3.2.4.2 Deputy Fire Chief

This position is a senior administrative employee of Clearwater County who under the authority of the Fire Chief is part of the administration team that leads, directs and

manages fire rescue services in support of the communities that encompass the residents of Clearwater County, Rocky Mountain House and Caroline.

This position assists the Fire Chief with long range planning, daily operations, and administration of the volunteer POC fire stations associated with the communities served by the CRFRS.

This position directs and effectively manages all assigned aspects of the CRFRS in close collaboration with the Clearwater County Emergency administration team.

This position is required to be on-call which is rotated among the administrative positions of CRFRS.

3.2.4.3 Assistant Fire Chief

These positions are senior administrative employees of Clearwater County who under the authority of the Fire Chief is part of the administration team that leads, directs and manages fire rescue services in support of the communities that encompass the residents of Clearwater County, Rocky Mountain House, and Caroline.

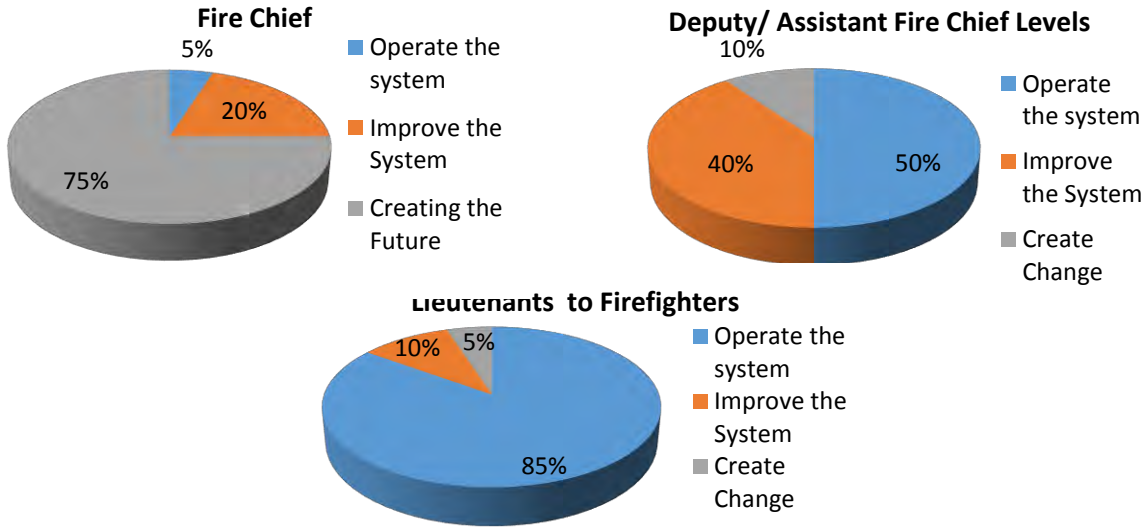
These positions assist the Fire Chief with long-range planning, daily operations, and administration of the volunteer POC fire stations associated with the communities served by the CRFRS.

These positions direct and effectively manage all assigned aspects of the CRFRS in close collaboration with the Clearwater County Emergency administration team.

These positions are required to be on-call which is rotated among the administrative positions of CRFRS.

The following theoretical images suggest how to allocate leadership time to effectively manage a department:

Pie Chart 1: Fire Service Time Management



When compared to similar sized departments, the CRFRS administration leadership team size is consistent with industry best practices. The number of positions required is a direct result of responsibilities and workload. The administrative positions are typically assigned specific roles and responsibilities for the safe and effective oversite of the service.

It is extremely important that any administration works closely as a team. A highly functioning team is one that understands each person's roles and responsibilities and brings their skills and talent together in a collaborative manner to lead the organization in achieving their vision, mission, and goals.

Ensuring that accurate and updated job descriptions are made available and understood for each team member and position within the organization will assist with laying the foundation of a high-performance team.

Traits of a high performing team include:

- Trust
- Collaboration
- Support
- Clarity
- Adaptive
- Reflective

This team atmosphere must resonate throughout the organization. As goals and vision are defined, they must be openly shared with the balance of the organization. Mechanism for providing feedback and clarity must be developed.

CRFRS Administration is made up of a Fire Chief, Deputy Fire Chief, and one Assistant Fire Chief. There currently is a vacancy for a second Assistant Fire Chief position that has not been filled. Each one of these positions have a tremendous amount of administrative responsibility as well as operational response requirements.

Current community growth projections, risk factors, POC attrition and increasing management demands associated with maintaining a primarily POC composite service will require additional operational and administrative staff capacity. The Chief Officers should be focusing most of their time on improving the current system and creating change to meet future challenges. In our opinion there is a shortfall with Administrative level supervision/management capacity. The recommended organization structure would allow for roles and responsibilities to be evenly distributed through the administration team while creating capacity to undertake and complete fire service management and strategic level requirements including those recommended in this FDMP.

Observation #6: *During interviews with the Fire Chief, Deputy Chief and Assistant Fire Chief it was obvious that each demonstrates an enthusiastic and professional passion for the fire service and specifically CRFRS. The interviews/survey with staff, Administration and Political levels indicated that the CRFRS Administrative needs to improve their internal communication processes amongst the team and key stakeholders.*

Recommendation #6A: Facilitate a team building workshop with senior CRFRS administration

(Suggested completion: 3-6 months)

It is recommended that the administration team for CRFRS undertake a team building workshop or planning session facilitated by a third party with the purpose of clarify roles and responsibilities, and developing a high performing administration team with clearly defined immediate and long-term goals for the CRFRS. Further, the development of a work plan with Specific, Measurable, Realistic Attainable and Timely (SMART) goals will ensure that the CRFRS Administration team efforts are focussed on priorities.

Recommendation #6B: Update CRFRS job descriptions

(Suggested completion: 3-6 months)

That updated job descriptions be shared with the current position incumbents. This activity can occur in conjunction with the recommended workshop.

Observation #7: *Information gathered from the interviews and surveys to stakeholders alluded to a sense of fragmentation regarding the direction of CRFRS from operational, administrative, and political levels.*

Recommendation #7: Develop and share short and long- term goals as an organization

(Suggested completion: 3-6 months)

CRFRS Administration work closely together with the Director of Emergency and Legislative Services to provide mechanisms to share their short term and long-term goals as an organization and with key stakeholders.

Observation #8: *The Fire Chief, Deputy Chief and Assistant Fire Chiefs are required to be on call-out status on a rotational basis. Due to the vacant Assistant Chief position the rotation is one week on call every three weeks. This requirement places additional demands on their capacity to effectively manage their respective administrative responsibilities. The Fire Chief, Deputy Chief and Assistant Fire Chief are putting in a large amount of overtime hours consistently to meet all the demands of their responsibilities and those responsibilities that were previously being performed by the vacant Assistant Chief position. This also places additional workload pressure on the three Administration Officers and is excessive and not sustainable. Further, during the interviews and consultations there were challenges identified regarding when the HQ Chief Officers are required to respond or monitor responses, and the empowering the responding Fire Officers and not requiring the Battalion Chiefs to be on scene.*

Recommendation #8A: Update the current department organizational structure (See Image 3 pg. 45)

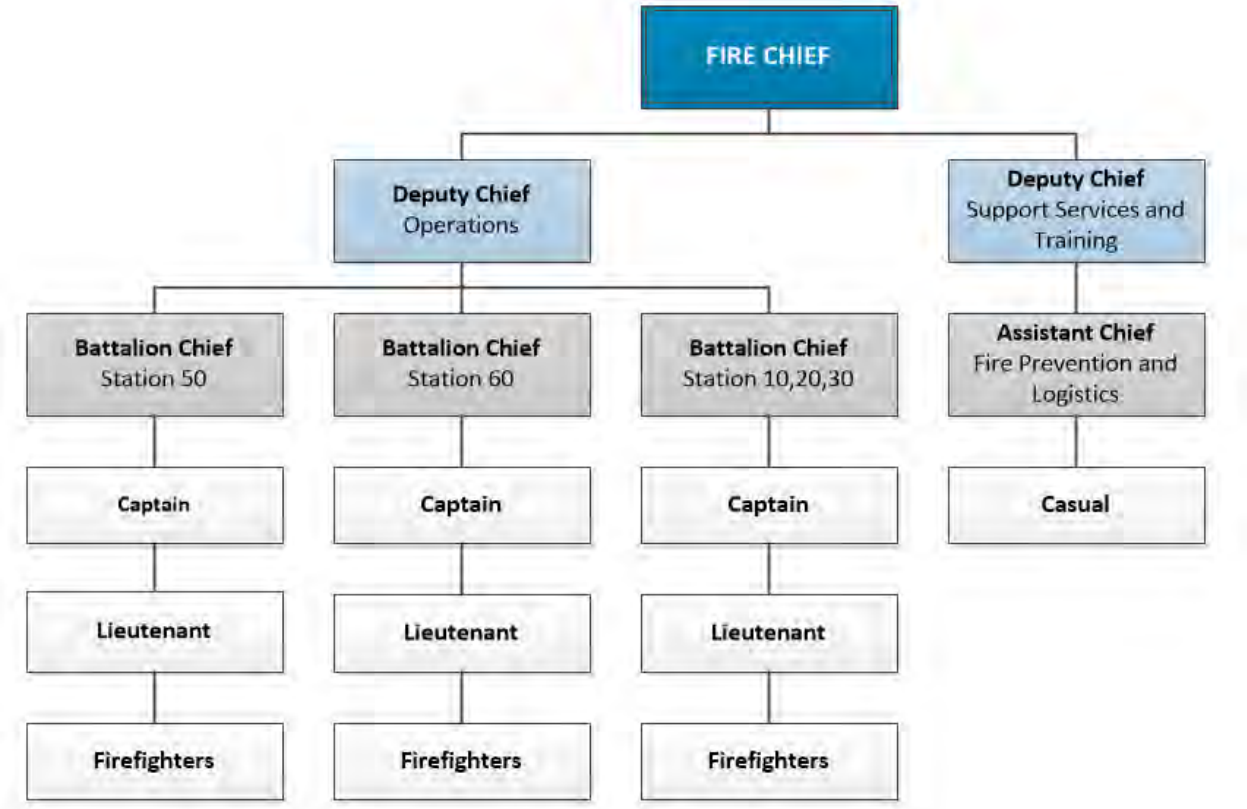
(Suggested completion: 6-9 months)

Re-classify one of the Assistant Chief positions to Deputy Chief. This will allow the Fire Chief to organize the administrative responsibilities with definitive responsibilities and a direct reporting relationship. The Deputy Chief of Operations would have primary responsibilities for the frontline operations of CRFRS with the Battalion Chiefs reporting directly. The Deputy Chief of Support Services and Training would be responsible for those areas of CRFRS that support the safe and effective delivery of services to the communities within Clearwater County. These services include, but not limited to:

- *Recruitment*
- *Training*
- *Promotional programs*
- *Purchasing*
- *Vehicle/apparatus maintenance and replacement*
- *Fire stations*
- *Equipment*
- *Personal protective equipment (PPE) and uniforms*
- *Further support as assigned by the Fire Chief*

As the portfolios of the Deputy Chief of Support Services and Training is too large to effectively manage alone, it is recommended that the vacant Assistant Chief position be filled and assigned to report directly to the Deputy Chief of Support Services and Training.

Image 3: Recommended CRFRS Organizational Structure (2020)



Recommendation #8B: Establish an 'alarm assignment response criteria' for Battalion Chiefs and the HQ Fire Chief, Deputy and Assistant Chiefs

(Suggested completion: 6-9 months)

The Fire Chief, in consultation with the Battalion, Deputy and Assistant Chiefs develop an 'alarm assignment response criteria' that is imbedded with Dispatch. The first responding Officer as part of the size-up declares the alarm response required. For example:

- *First Alarm: Routine calls that do not require additional support from an assisting station or the recall of on-call staff. Primary response has the capacity to mitigate.*
- *Second Alarm: Working fires or emergencies that require a response from the assisting station and the recall of on-duty staff (Battalion Chief).*
- *Third Alarm: Major events that require additional response from assisting stations, recall of Battalion and HQ Chief Officers.*
- *General Alarm: Recall of all on-call and off-duty firefighters.*

3.2.5 CRFRS Non-Administrative Positions

3.2.5.1 Battalion Chief: Paid-On-Call

The battalion chief is a mid-level chief officer/firefighter responsible to the Fire Chief through the Assistant Chief and is required to demonstrate high-level knowledge and competence regarding all aspects of fire and rescue operations. Responsibilities include leading assigned fire stations to provide fire and rescue service safely and effectively in both emergency and non-emergency situations. This position is required to make rapid decisions under difficult conditions while considering the safety of their staff in the constant analysis of risk versus reward, and the potential consequences of such decisions. This position is required to assume an incident command role until relieved where necessary by a higher-ranking position within CRFRS.

This position is expected to provide leadership accurately and competently through effective communication to both the administration and the officers and firefighters under their authority.

3.2.5.2 Captain Firefighter: Paid-On-Call

The captain firefighter is a front-line firefighter responsible to the Fire Chief through the battalion chief and is required to demonstrate high-level knowledge and competence regarding all aspects of fire and rescue operations. Responsibilities include leading a team of firefighters in both emergency and non-emergency situations. This position is required to make rapid decisions under difficult conditions while considering the safety of their staff in the constant analysis of risk versus reward, and the potential consequences of such decisions. This position is required to assume an incident command role until relieved where necessary by a higher-ranking position within CRFRS.

Captains may be assigned specific portfolios by the Fire Chief in such areas as PPE, equipment, training programs, or others as deemed necessary by the Fire Chief.

3.2.5.3 Lieutenant Firefighter: Full-time and Paid-On-Call

The lieutenant firefighter position is a junior officer position and assists with or assumes operational leadership roles for the safe and effective oversight of emergency operations. Lieutenants are assigned to individual crews by incident command to safely and effectively lead teams of firefighters to complete assigned tasks. The lieutenant may be required to act as incident commander at emergency incidents until relieved by a higher authority.

Lieutenants are assigned specific portfolios by the Fire Chief in such areas as PPE and equipment maintenance, training program delivery and other assignments as deemed necessary by the Fire Chief.

3.2.5.4 Firefighter: Full Time and Paid-On-Call

Firefighter is an operational position who under the direction of the station/company officers, is responsible for performing duties and services provided by CRFRS. Key duties and responsibilities include responding to all categories of emergencies, performing fire prevention duties, completing general duties such as vehicle, equipment and station housekeeping and basic maintenance, and participating in assigned training.

3.2.5.5 Recruit Firefighter: Paid-On-Call

Recruit firefighters are responsible to the lead training officer or on-scene immediate supervisor for performing limited fire suppression and dangerous goods control functions under close supervision, as well as fire prevention and related duties. The recruit firefighter shall not be a member of an interior attack team and is not permitted to wear SCBA except for training evolutions. At the discretion of the supervising officer, the Chief or Deputy Chief, they may be permitted to support other emergency roles where proper training has been obtained. The recruit firefighter shall comply with all Departmental standards, policies, and procedures.

3.2.5.6 Support Staff: Non-Operational

There are two administrative support positions reporting to the Director, Emergency and Legislative Services. These positions provide support services, including clerical, secretarial and reception duties for programs and activities within the scope of the department, including CRFRS.

3.3 Remuneration, Recruitment, Selection, Retention, Advancement, and Promotion

CRFRS administration attempts to select and retain the best individuals possible for any available position. The recruitment and retention of POC firefighters remain a high priority. Again, this issue is not unique to CRFRS, as most communities that rely on volunteers and/or POC firefighters to provide the necessary level of response are faced with significant challenges in recruiting new firefighters and retaining the firefighters they have.

The current rate of volunteer/POC firefighters leaving CRFRS has been manageable however they do anticipate several senior members retiring or otherwise leaving the CRFRS in the next few years.

3.3.1 Remuneration

Compensation for CRFRS administration positions are handled through individual contracts with the Clearwater County.

Compensation for the non-administrative positions within the CRFRS is contained within Clearwater County policy including:

- Stepped hourly compensation based on qualification and rank

- Standby pay is provided where applicable
- Compensation for training

3.3.2 Recruitment

Personnel recruitment is a key function of all emergency service agencies. The community places a tremendous amount of faith in their fire personnel, trusting them to provide the highest level of service when the public is most vulnerable. As such, the process used to select personnel should be very comprehensive.

The reasons for candidates seeking positions in a volunteer/paid-on-call fire department depend on the individual, but are typically identified as:

- The desire to contribute to the community
- Status
- Brotherhood/sisterhood
- Continuing education
- Seeking qualifications/experience towards full-time firefighter positions

Experience within the emergency services industry has shown that relaxing the requirements for entry-level positions is not the answer for recruiting any employee. Instead, most departments have had the greatest success when qualified applicants are encouraged to apply. This process often involves targeted advertising and promotional campaigns aimed at demonstrating the benefits, as well as the personal satisfaction of becoming part the fire service. Existing firefighters should be encouraged to participate in any such campaign.

Firefighting opportunities are advertised through the Clearwater County and CRFRS websites, as well as word-of-mouth from existing members.

Minimum recruitment requirements include:

- 18 years of age or older
- Alberta Class 5 (non-GDL) driver's license with 6 or less demerits
- Provide a current criminal records check (vulnerable sections check)
- Eligible for employment: Canadian citizen, permanent resident card or landed immigrant card
- Completion of physical evaluation form

CRFRS conducts their recruitment program once per year starting in August (main recruitment drive) with intake commencing January. During this recruiting campaign, they typically attract over 20 applicants.

One additional firm requirement for recruitment for CRFRS is potential recruits are required to live in Clearwater County, Rocky Mountain House, or Caroline. The exception is Nordegg, where part-time residency is acceptable. This is a necessary requirement to ensure a safe and timely response is achievable. Some services have a relaxed residency requirement,

particularly when an individual is employed in the response area and is available to leave their employ when requested.

A concept that may have some merit for CRFRS is to recruit individuals that do not wish to, or are unable to, fulfill all the obligations of a 1001-level certified firefighter. There are several functions within the Service that may be able to be accomplished effectively and safely outside the role of a front-line firefighter. If certain roles could be identified by CRFRS Administration, there may also be opportunity for some of the current retiring or past members to continue to contribute.

Recruitment of firefighters in a volunteer/paid-on-call service can be challenging. CRFRS acknowledged these challenges and initiated several recruitment and public relations initiatives to attract suitable candidates. Interviewees have indicated that to date the recruitment of new POC firefighters has to a degree been sufficient, with an adequate number of applicants coming from Rocky Mountain House, but because of the permanent or temporary residency requirements in outlying areas, especially Nordegg, there are limited applicants each year.

There is no ideal number of POC firefighters that will guarantee there are enough firefighters available for every response. Approximately 33% of the CRFRS POCs are consistently active and participate in the bulk of training sessions and responses. This is indicative of the POC firefighter limitations and cannot be interpreted as a performance shortfall for any of the CRFRS POC firefighters. There is a balance between the availability of POC firefighters and the cost to train and maintain each firefighter. A key component is that each POC firefighter is doing their share of training and responding.

Observation #9: *CRFRS has taken advantage of recruitment opportunities in the community. Annual firefighter recruitment drives have addressed the annual firefighter needs, however there may be opportunity to increase both the interest and applications for future POC firefighters if the recruitment drive was open year-round and intakes were commenced when sufficient numbers of applicants are received and vetted. There are opportune times during the year where there is an increased focus on fire safety in communities. Examples are during the annual Fire Prevention week each October, where increased promotion of firefighter recruitment can be advertised.*

Recommendation #9: Consider increasing recruitment drive to an open time frame

(Suggested completion: 12-24 months)

It is recommended that the CRFRS consider increasing the recruitment drive to an open time frame and commencing firefighter intake when shortages are identified, and enough candidates are available.

Observation #10: *Another program that has been successfully utilized in POC fire services is the Workplace Experience Program (WEP). This accepted program provides opportunity for new NFPA 1001 Level I, II firefighters to gain valuable work experience and further their knowledge base by working alongside an established fire department for what is typically a 12-month assignment. During this time, these firefighters are housed at the fire hall and provide Monday to Friday daytime response coverage for what at many times has limited POC firefighter availability. These firefighters are compensated for responses and provided further training opportunities.*

Recommendation #10: Consider a work experience program (WEP)

(Suggested completion: 0-12 months)

It is recommended that the CRFRS consider the work experience program (WEP) for their service. This may prove to be very successful in Nordegg where there is a shortage of available POC firefighters, particularly during the normal Monday to Friday times.

3.3.3 Selection and Training of Recruit Firefighters

Potential candidates for volunteer POC firefighter positions go through an internal selection process requiring applications to be submitted on-line to CRFRS Administration for consideration. Candidates must submit a criminal records/vulnerable section check along with a driver abstract prior to commencing any training.

Candidates are required to:

- Submit their completed application form (available on the CRFRS website) for pre-screening
- Submit to an interview with members of CRFRS
- Successfully complete the physical fitness evaluation (details contained in the recruitment handbook – available on the CRFRS website)
- Each application is reviewed by the CRFRS selection committee for suitability
- Successful candidates are provided an employment orientation requiring two (2) weekends of attendance
- Each recruit commences a combination of on-line learning and practical skills learning during practice nights
- Each recruit is continually evaluated along the way for comprehension, suitability, and competency
- Each recruit is subject to a minimum of six (6) months probationary period
- The increasing costs and time commitment to train recruit firefighters is quite significant which validates the need for a comprehensive selection process. CRFRS has a good selection process with several opportunities to assess the candidate, as well as provide much needed exposure of expectations for the candidates.

3.3.4 Retention

CRFRS typically loses several firefighters per year to resignation or retirement. The average years of service for POC firefighters now is currently at seven years and has 60% of their current firefighter complement at five years or less. The training costs, compensation, equipment (including PPE), consumables and staff time for each paid-on-call firefighter is estimated to be $10,000 to $15,000 to meet the operational level qualifications.

The typical reasons for both a decreased interest in applying for a volunteer/paid-on-call firefighter position and ongoing retention issues include:

- Increased demands of Department time obligations
- Low call volume
- Family obligations
- Primary work obligations
- Childcare
- Physical move out from the community
- Increased training demands up to NFPA 1001 and other requirements
- Occupational health and safety requirements
- Full-time/career firefighter opportunities
- Low compensation provided

Observation #11: *CRFRS POC turnover rates have been manageable, with approximately one to two firefighters leaving each year. There are however several senior experienced members with 25 years of service or more, who may be approaching retirement. This places an increased emphasis on training and development to ensure there are qualified individuals to lead their respective crews effectively and safely in challenging and hazardous conditions.*

The loss of more senior and experienced personnel is leading to a junior and less experienced firefighter complement for CRFRS. Given this demographic shift, exploring opportunities to retain this experience in some capacity will serve the CRFRS well.

Recommendation #11: Research retention opportunities for senior and/or retiring members in non-operational roles

(Suggested completion: 0-24 months)

It is recommended that the Fire Chief research opportunities to retain senior and/or retiring members in non-operational roles, such as coaching, mentoring, and administrative roles.

3.3.5 Advancement and Promotion

Recruit firefighter advancement to full firefighter status will occur in conjunction with existing policy.

- The following positions are filled through assessment and appointment:
- Fire Chief - Appointed by Director of Emergency and Legislative Services
- Deputy Fire Chief - Appointed by the Fire Chief
- Assistant Fire Chiefs - Appointed by the Fire Chief
- Battalion Chiefs, Captains and Lieutenants - Appointed by the Fire Chief (providing experience knowledge and suitability as per policy

Observation #12: *Feedback from the firefighters indicate that the promotional process may be in policy, however the current process has not been transparent and has created some frustration amongst potential officers.*

Recommendation #12: Demonstrate a transparent and comprehensive promotional policy

(Suggested completion: 0-12 months)

The Fire Chief working with the POC and full-time officers to understand the current promotional policy that includes transparent and measurable criteria. Criteria such as attendance at practice sessions and emergency responses, teamwork and leadership, technical competence, commitment to CRFRS or community events that are criteria for promotion or advancement. In addition, to ensure enough firefighters are trained and ready to assume officer roles and other promotional opportunities, it is recommended that the Fire Chief establishes a sustainable succession plan.

3.4 Training

Training and competency refer to the specific programs within a fire department, which exist to support the services CRFRS provides. A prepared and competent workforce reduces risk and safely optimizes service delivery. An effective workforce-training program aligns the growth and development of personnel to the organization's mission and goals.

Training and education program activities are identified by assessing the knowledge, skills, and abilities (KSA) needed for the firefighters to perform their duties as outlined in the department's SOGs and Procedures. Additionally, occupational health and safety (OHS) has increased the formal requirements for training and maintaining records of that training with compliance to Alberta OHS regulations: Guide for Firefighting and applicable NFPA standards. When firefighters are competently trained and possess the KSAs for the services they are expected to provide, they reduce risk and increase their own safety and the safety of the public they serve.

A significant challenge identified in interviews, is the increasing volume and complexity of training required for the wide range of service types and roles. CRFRS is committed to a training curriculum developed to ensure the necessary training is completed and tracked.

The anticipated POC attrition, public service expectations and increasing complexity of emergency situations require CRFRS to prioritize their training programs and scheduling to ensure their firefighters are qualified for all critical tasks required. CRFRS training addresses core competencies as well as unique or specialized training that are required for the safe performance of duties. Members are encouraged to develop and demonstrate leadership as they serve CRFRS. The current training curriculum is consistent with NFPA and other applicable standards.

In 2018 CRFRS implemented the firefighter training passport. The passport identifies a list of competencies in the disciplines including fire skills, rescue skills, medical skills and if applicable, apparatus driver/operator skills. All CRFRS POC firefighters are required to review and demonstrate proficiency in each competency, and have their passport signed off by a senior ranking member and then validated by the Battalion Training Chief. All POC firefighters must submit their completed passport by years end. Any deficiencies are documented in the firefighter's performance review and require satisfactory completion within a reasonable time in the following year. SOG, Section 200.2, Training outlines this process.

Additionally, a similar system was implemented for new recruits receiving their orientation training. Taking the approximately six full days to complete, the recruit is required to complete a series of basic in-house and online training components. It takes new recruits approximately three-month period to complete the required of in-station training. As recruits demonstrate proficiency and complete the required training, their passports are signed off by a mentor and station officer. Following the successful completion of their training, they receive their radio and station access to begin their journey towards completing the training to become an interior attack firefighter.

In both cases, the passport system is a highly successful approach to monitor competencies and satisfy OHS requirements. Additionally, this approach focuses training on the core competencies POC are required to master to provide emergency services safely and effectively.

Provinces including Alberta are focusing on training standards for both career and volunteer/POC fire services in attempts to standardize the training and qualifications required to serve as a firefighter. NFPA 1001 is the widely recognized firefighter standard that many provinces and municipalities base their qualifications on. For smaller communities that have POC services with lower call volumes or limited risk, it is extremely difficult to train their firefighters to this standard. The cost and time commitments combined with the travel to acquire the necessary training creates a prohibitive trend with volunteerism and has led to service level-based competencies.

As an example, British Columbia (BC) has enacted the 'Structural Firefighters Competency and Training Playbook' through the Office of the Fire Commissioner. This document is applicable to all fire services personnel in BC. This Playbook sets out the competencies required for specific service levels and the respective training and operational requirements that must be met by each fire department. Each AHJ is required to declare the level of service that they will accept for their community. The AHJ is normally the Council or Board of the applicable local government. The rationale for this approach is to establish service levels through policy that include the KSAs for the firefighters. The three levels of service are:

- Full-Service Operations Level Firefighter
  - Allows activities that are undertaken by firefighters and officers trained in the full spectrum of competencies outlined in NFPA 1001
- Interior Operations Level Firefighter
  - Include entry into simple structures for the purpose of control and/or extinguishment of fires
- Exterior Operations Level Firefighter
- Firefighting activities restricted to the control and/or extinguishment of fire from a position external to the building or object in question

CRFRS maintains a comprehensive schedule for required training of both the incumbent staff as well as recruits progressing through the required training. Regular training dates are scheduled throughout the calendar year with the expectation that a combination of training sessions and response requests are regularly attended. Regular training sessions are routinely conducted by the Fire Chief, Deputy Fire Chief, Assistant Chief, or qualified instructors.

CRFRS utilizes in-house training areas within each fire station for most of their regular training sessions. Live-fire requirements are currently being done at the Red Deer Emergency Services fire facility. The opportunities to utilize the live-fire training facility are limited and primarily booked to provide the necessary live-fire requirements of the NFPA 1001 firefighter standard. Officers are also given the opportunity to participate to gain experience running a fire ground. A limitation to utilizing this facility for training is the need to take their apparatus and firefighters outside their jurisdiction for such training.

There is a designated area, plans and budget to build a regional training facility on the new Leslieville fire station property. This facility is anticipated to enhance the level of training for all CRFRS staff including, but not limited to:

- Live fire training
- Proper apparatus staging
- Search and rescue
- Hose operations
- Rapid intervention team (RIT)
- Crew coordination
- Vehicle extrication
- Simple dangerous goods response
- Other firefighter core competencies

Opportunities may well be afforded to offer this facility to other fire services or emergency services to offset the capital and operating costs of this facility.

3.4.1 Industry Recommended Qualifications

The following section outlines industry recommended training standards. Training for these qualifications should be provided for members in the respective roles. Training courses outside of these standards would be provided at the discretion of the Chief of Training subject to the Fire Chief's approval.

Deputy Chief and Fire Chief

- NFPA 472 Dangerous Goods Operations
- NFPA 1001 Firefighter (Level 2)
- NFPA 1002 Pump Operator
- NPFA 1021 Fire Officer (Level 2)
- NFPA 1041 Instructor (Level 1)
- NFPA 1403 Standard on Live Fire Training Evolutions
- NFPA 1521 Incident Safety Officer

Captain(s)

- NFPA 472 Dangerous Goods Operations
- NFPA 1001 Firefighter (Level 2)
- NFPA 1002 Pump Operator
- NPFA 1021 Fire Officer (Level 1)
- NFPA 1041 Instructor (Level 1)
- NFPA 1403 Standard on Live Fire Training Evolutions
- NFPA 1521 Incident Safety Officer

Lieutenant(s)

- -NFPA 472 Dangerous Goods Operations
- NFPA 1001 Firefighter (Level 2)
- NFPA 1002 Pump Operator
- NPFA 1021 Fire Officer (Level 1)
- NFPA 1041 Instructor (Level 1)

Firefighter

- NFPA 472 Dangerous Goods Operations
- NFPA 1001 Firefighter (Level 1)
- NFPA 1002 Driver/Pump Operator
- NFPA 1006 Vehicle extrication Level 1

Operator

- NFPA 472 Dangerous Goods Operations
- NFPA 1001 Firefighter (Level 1)
- NFPA 1002 Driver/Pump Operator
- NFPA 1002 Aerial Operator
- NFPA 1006 Vehicle extrication Level 1

Training Officer

- NFPA 1041 Instructor (Level 1)
- All Qualifications required to instruct firefighters and recruits
- NFPA 1403 Standard on Live Fire Training Evolutions

Safety Officer

- NFPA 1521 Incident Safety Officer

It is extremely important that training requirements and priorities are aligned with the approved standard, or level of service approved in the Intermunicipal Agreement between Clearwater County and partner municipalities.

3.5 Health and Wellness

The active pursuit of employee/member health and wellness is extremely important to an organization. The benefits include:

- Decreased absenteeism
- Decrease in injuries during normal duties
- Decreased WCB premiums
- Employee career longevity
- Improved work/home balance
- Career longevity

Clearwater County has a policy that outlines their commitment to health and safety. Council and administration have embraced the pursuit of their employees' health and wellness through programs including the adoption of a health and safety management system including:

- Exposure tracking
- Post-fire decontamination processes
- Fitness facilities in fire halls
- Dry saunas for firefighter use after fires

3.6 Core Services

The fire services and the service levels provided should align with the identified community risks and the needs of the citizens. Cyclical evaluation of community risks and fire department response capability is necessary to support ongoing emergency planning. Most citizens will not have the need to access fire department services. However, when emergencies occur, service expectations are high. Good planning processes are necessary to ensure citizens get the services they expect, and the community gets good value for their investment.

Clearwater County has a well-defined list of services provided by the CRFRS and the associated competencies linked to these services. Clearwater County Bylaw 1069/20 identifies the County's intent to operate fire and rescue services and provide the following emergency and non-emergency services:

3.1 Council does hereby establish the Fire Department and outlines the duties as follows:

s) prevent control, and extinguishing fire incidents

t) provide a 911 public service answering point and dispatch service

u) investigating the cause and origin of fires pursuant to the QMP and the Safety Codes Act

v) pre-fire planning and fire inspections pursuant to the QMP

w) preserving life and property and protecting persons and property from injury or destruction by fire

x) *preventing prairie or running fires and enforcing the provisions of the Forest and Prairie Protection Act*

y) *responding to Hazardous Material incidents to mitigate the threat*

z) *carrying out agreements with other municipalities or persons for the joint use, control and management of firefighters, fire extinguishing apparatus, general equipment, and rescue equipment*

aa) *maintaining and operating apparatus and equipment for extinguishing fires or preserving life and property*

bb) *initiate temporary traffic control on a highway*

cc) *rescue*

dd) *medical first response services*

ee) *fire and disaster planning*

ff) *preventative controls*

gg) *public education and information*

hh) *training or other staff development and advising*

ii) *to enforce County fire bylaws, fire policies, and where applicable Alberta fire legislation*

jj) *other incidents*

Further, the Intermunicipal Fire Services Agreement formalized in March 2020 describes the services by the CRFRS across the region. As illustrated in Schedule "B" of the Agreement (see Table 7.), services are listed, and the level of service identifies the responder competency level and associated training required to meet that standard.

Table 7: Schedule B. Service Types and Service Levels

SCHEDULE "B"
SERVICE TYPES AND SERVICE LEVELS

Service Type	Level of Service	Training Required	Trained Members Required	Major Capital Equipment Required
Fire Suppression		Blue Card for officers		
Structure	Technician	1001-L1/1002 / L-180 / ICS 100	all (100)	Fire Engines, Tenders, Aerial, SCBA
Brush/Grass	Technician	1051-L1/1002/UTV	all	Wildland Units, Tenders, Portable pumps, Side by Sides
Wild land / Urban Interface	Technician	1051-L1/WUI Ops/UTV	all	Wildland Units, Tenders, Portable pumps, Side by Sides
Motor Vehicle	Technician	1001-L2/1002	all	Equipment listed above
Oil & Gas Well / Pipeline	Awareness	1001-L2/1002	all	
Rescue		Blue Card for officers		
Motor Vehicle Collision	Technician	1001-L2	all	Rescue units, Hydaulic Tools, Edraulic Tools,
Motor Vehicle Collision (Heavy)	Technician	AVEA Adv. Ex.	35	Heavy Hydraulic Tools, Struts, Specalized equipment
Domestic Rescue	Technician			Equipment listed above
Drone Search	Technician	Adv. RPAS	10	Drones
Ice Rescue	Technician	Ice Tech.	35	Ice Rescue Suites, Rigging, Ropes
Water Rescue	Technician	Swift Tech/Jet Boat/MED A3	35	Boat, Dry Suites, Rigging, Ropes
Technical Rope Rescue Low Angle	Technician	Rope Tech.	35	Ropes, and Rigging
Farm (i.e. grain bin, equipment)	Operations	AVEA Farm Ex./UTV	35	Heavy Rescue Equipment, but also Grain Bin rescue equipment
Industrial Emergency (oil & gas)	Awareness	1001-L1	all	Equipment listed above
Power lines Down/Electrical	Awareness	1001-L1	all	Equipment listed above
Confined Space Rescue	Awareness	1001-L1	all	Equipment listed above
Medical Response				
First Medical Response (i.e. dispatched to cardiac arrest)	Operations FMR level	SFA/BLS (MFR Pro.)	all	Equipment listed above
Hazardous Materials		Blue Card for officers		
Dangerous Goods (transport)	Operations	1072-Ops	all	SCBA, Decontaimnation
Odour Complaints (oil & gas)	Awareness	1072-Ops	all	Equipment listed above
Alarms (i.e. C02)	Operations	1072-Ops	all	Equipment listed above
Fuel Spills	Operations	1072-Ops	all	Equipment listed above
Investigations & Inspections				
Fire Investigation	Technician	1033/SCO	7 (HQ)	
Fire Inspections	Technician	1031/SCO	7 (HQ)	
Public Education				
School Tours of Halls	Technician	1001-L2	all	
Events (i.e. Safety Day)	Technician	1001-L2	all	
Mutual Aid Responses	Level able to release as per Duty Chief Officer			Equipment listed above

Page 1

Although the description in Table 7 includes service levels, it identifies individual firefighter competencies and does not identify fire department response capability. Ideally, fire department service levels identify minimum staffing and apparatus requirements to provide an effective response force (ERF) for probable community risks and event types. Service levels should also identify response time benchmarks. It is reasonable to develop different service levels for different demand or response zones.

Fire service resources should be adequate to manage the most probable risks. Single family dwellings are the most prevalent building type in most communities. As a result, these types of structure fires are typically the most probable, but only rated as a moderate risk as the consequence are limited to one or two properties. Where the identified risk has the potential to exceed the response capability, such as extensive wildland fires, response plans including mutual aid partners should be developed. Several community fire and rescue risks were identified and discussed in this report including:

- Structure fires
- MVCs
- Urban wildland interface fires

Table 8 below identifies the most frequent response types over the last three years. Responses to motor vehicle incidents (MVIs) continue to be the leading service provided by the CRFRS. Structural and vehicle fire suppression events were relatively frequent. By combining these response types into one category, it is difficult to identify specific trends.

Table 8: CRFRS Response from 2017 - 2019

Response Type	2017 - 2019
Motor Vehicle Incident	371
Alarm No Fire – Fire Alarms	318
Structure / Vehicle Fire	260
Public Service - Medical Co. Response	205
Brush/Grass (no $ loss)	176
Public Service - Medical First Response	138
Wildland/ Urban Interface	111

Ideally, fires statistics would be more granular to help identify trends and causes of specific types of fires. The data should identify general type of fire, room of origin and potential cause. For example, kitchen fires caused by cooking may increase because of more children remaining at home during the pandemic.

It is common for false alarm responses to be relatively high. The County's 'False Alarms Bylaw 1069/20 Clause 13' confirms CRFRS can charge a fee for these responses (within County areas) in the event they are occurring frequently at the same property to help reduce this service pressure. This is particularly important for POC staff. It is understood that the other municipalities in Clearwater County have similar bylaws enacted.

In general, CRFRS is well equipped, trained and resourced to safely and competently provide the services listed above. The CRFRS provides the services to manage the most commonly occurring events, each of which will be discussed in greater detail in the following section. As previously indicated in Section 3.1 (p. 33), the Fire Chief should complete a SOC policy for Council approval. This policy is based upon the risk assessment framework and observations contained in this

report. The SOC identifies benchmarks for each service level, which may differ in the demand zones of each of the five stations.

3.7 Core Service Specifics

The following section describes the core services provided by CRFRS.

3.7.1 Structural Fire Suppression

A breakout of structural and vehicles fires was provided for the period 2017 to 2020 (to date). The average structural and vehicle fires over this period are 18.5 and 25.5, respectively. It is important to track these incidents separately to identify trends and possible prevention methods. Structural fires are identified as moderate risks, they are considered the most hazardous of responses and require significant resources to manage safely and effectively.

Table 9: Structure and Vehicle Fires 2017-2020

Year	2017		2018		2019		2020	
Location	Structure	Vehicle	Structure	Vehicle	Structure	Vehicle	Structure	Vehicle
Leslieville Stn. 10	1	2	4	2	4	4	1	2
Condor Stn. 20	2	1	2	2	1	2	0	2
Caroline Stn. 30	5	3	6	3	3	7	2	5
Nordegg Stn. 50	0	0	2	0	0	0	2	0
Rocky Mtn Stn. 60	9	14	9	23	15	18	6	12
Total	17	20	23	30	23	31	11	21

Structural fire suppression encompasses a wide range of tactics for the control and extinguishment of fires originating from several sources. In both the interviews and survey, firefighters agreed that the CRFRS is well equipped and properly trained to respond to fires that originate within or outside a structure, allowing safe and effective rescue and suppression tactics for the control and extinguishment of fires. CRFRS maintains a modern fleet of emergency response vehicles and equipment along with a committed team of firefighter staff available for emergency response. The POC firefighters may be called upon anytime during the day or night seven days a week.

During the interviews and within the survey, a degree of concern was expressed regarding the occasional shortfall in the numbers of firefighters responding to events. This is especially evident in Nordegg, Station 50. This concern is further exacerbated by the isolated location of this Station, with the nearest second due response is an hour away.

Structure fires that require entry into the building for fire suppression and rescue require many critical tasks to occur simultaneously for the safety of both the victims and the firefighters. Each of these tasks may require one or more companies of firefighters to accomplish them safely and effectively. Without enough companies of firefighters on scene, entry may be delayed until some of these tasks are completed.

CRFRS have well defined and easily accessible standard operating guidelines. SOG 604b and 604c clearly identify the staffing apparatus required to safely manage the critical tasks associated with specific response types. These SOGs are clear in defining various levels of service for structural fires based on firefighter availability. For example, interior attack will not begin until at least four firefighters are assembled. This limitation is a particularly important element for maintaining firefighter safety. For reference, NFPA 1720 recommends a minimum of six firefighters to commence structural firefighting on a low-hazard structure in a rural setting, and four firefighters in remote settings.

Observation #13: *The County has numerous mutual aid agreements; some of the agreements are recently executed while others should be reviewed and updated. In the event of a large structure fire, such as a high or low-rise apartment involving evacuation, CRFRS's resources are likely to be overwhelmed. SOG 672c, Response to High Rise Incidents details several the challenges involved, including evacuation, but does not identify the need to trigger mutual aid as soon as possible. The evacuation of an occupied apartment building is a resource intensive activity that could quickly exceed the capacity of the CRFRS.*

Recommendation #13: Amend or update mutual aid contracts to include automatic aid for select high-assembly occupancies.

(Suggested completion: 0-36 months)

CRFRS should consider updating the dispatching protocol and mutual aid contracts to include automatic aid in the event of a confirmed fire at specific high occupancy properties. This process could be programmed into the Red Deer Emergency Services dispatching system.

3.7.2 Industrial Firefighting and Response

Industrial fires pose unique challenges and risks to firefighters. Many facilities contain quantities of dangerous goods and chemicals. These facilities typically have larger footprints and multiple bays or divisions. Fires in these types of facilities can get out of control very fast and may lead to a more defensive strategy of containment.

Schedule B. Service Types and Service Levels of the Intermunicipal Agreement identifies an oil and gas industrial response is a service provided by the CRFRS. This response is limited to the awareness level, with the priority being placed on rescue and not fire suppression. Several oil and gas industrial facilities are located within the County. In some instances, industrial sites may have a specifically trained emergency response teams with varying degrees of training, equipment, and expertise. This is not the case with all the facilities in the County.

Given the complexity and risk associated with fire suppression at these types of facilities, CRFRS should continue to limit the focus of their response to rescue and life-safety. Fortunately, a review of 2017-2019 response data indicate these are infrequent events for all Stations in Clearwater County.

3.7.3 Motor Vehicle Collisions

Motor vehicle collisions (MVC) with or without trapped persons can pose unique hazards to both the victims and responders. MVC response is the most frequent service provided by the CRFRS. This risk was identified in Section 2, Community Risk Profile. Highways 11 and 22 are heavily traveled primary highways that crisscross the County. Several secondary and narrower roadways also within the vast area of the County also contribute to this risk. Further, increasing tourist and commercial traffic increase the risk.

Vehicle extrication requires specialized training and equipment. Extra resources and close coordination with other emergency services is necessary for the safety of both victims and responders. Weather conditions and time of year also contribute significantly to both the severity of the incident and the effectiveness of the response.

Many of modern vehicles have added risks to firefighters, such as airbag deployment and hybrid vehicles containing fuel cells or batteries. Vehicle collisions or events involving transport vehicles often pose the additional challenge of involving dangerous goods or requiring heavy equipment to manage

CRFRS firefighters have the training, equipment and SOGs to safely to provide MVC response and victim extrication. The CRFRS provides the training to respond to emergencies involving vehicles ranging from small passenger cars to transport and commercial vehicles. SOG 604a, 670a and 670b identify the resources, safety procedures and tactical priorities required to manage this risk.

3.7.4 Medical First Response

Medical first response (MFR) and co-response are valuable services provided by CRFRS. The distribution of fire department resources often exceeds that of ambulance resources and as a result, firefighters are often able to respond to medical emergencies faster, or in support of, ambulance services. In Alberta, fire department resources across the province provide support to Alberta Health Services (AHS) Emergency Medical Services.

Many fire services in Alberta have similar agreements with AHS with the goal of enhancing the life-safety to their citizens. They provide MFR to their community, either as a primary EMS provider or in support of the AHS.

CRFRS' SOG 11, identifies that medical co-response is provided to the operations and first medical responder level. Survey and interview participants universally supported providing medical first and co-response services in Clearwater County and the municipalities. Many commented that it was an important service to continue to support and that it did not tax the CRFRS. Combined, medical first response and co-response make up the second largest proportion of response types for the Service.

The CRFRS is an important part of the emergency medical safety net for residents of Clearwater County and the communities within it. CRFRS participates in the AHS Medical First Responder program and provides basic first aid with specific enhancements such as providing oxygen therapy. CRFRS responds to specific life-threatening emergencies as well as in support of ambulance staff when requested. This is an appropriate level of service for a POC fire service to provide.

3.7.5 Wildland Urban Interface Firefighting

Wildland urban interface (WUI) fires are a risk that may range from low to extreme depending on the magnitude of the fire. There are several areas within the County and around the communities where development has occurred within or near the forested lands. Brush/grass and wildland urban interface fires are frequent events in Clearwater County. This risk is discussed in detail in the Community Risk Overview.

Clearwater County is well equipped and trained to provide a rapid initial response to these types of fires. SOG 694b outlines wildland firefighting procedures and identifies that all firefighters operating in the hot zone of the fire must be NFPA 1051: Standard for Wildland Firefighting Personnel. Further, the CRFRS fleet includes several wildland engines, tenders, and utility terrain vehicles.

As wildland fires can be protracted with numerous fire scenes involved, these fires can quickly exhaust POC fire department resources. Clearwater County has several agreements with mutual aid partners to call on to assist as required. Additionally, Alberta Agriculture and Forestry has resources in the immediate region. As a result, Clearwater County is well positioned to manage wildland and urban interface fires.

3.7.6 Dangerous Goods Response

Response capabilities should align with service levels defined in the NFPA 472: Standard for Competence of Responders to Hazardous Materials Weapons of Mass Destruction Incidents service level matrix. It requires departments without advanced hazmat training to take only a limited role in hazardous materials (hazmat) response. There are three hazmat response service levels.

The first level of service is the awareness level. This level is the most basic and is for persons who could be the first on the scene of an emergency involving hazardous materials. Responders at the awareness level are expected to recognize the presence of hazardous materials, protect themselves, call for trained personnel and secure the area to their best of their abilities. It does not involve donning protective suits to enter the contaminated zone to stop the flow of hazardous materials or conducting decontamination.

The second level of response is the operations service level. Responders are trained to be part of the initial response and control the impact of the release in a defensive fashion. Crews are expected to take a more hands-on approach than considered at the awareness level. They will use absorption, damming and diking to stop or redirect the flow of the hazardous material. Firefighters are trained to don protective suits, enter the hot zone to conduct

rescue activities and control the product release. They must also establish a decontamination zone for responders and equipment. Crews also lead the evacuation in the hot zone.

The third level of response is the technician level. Technical-level responders must be certified hazmat technicians, trained in the use of specialized chemical protective clothing and control equipment. Responders at this level take offensive action in responding to releases or potential releases of hazardous materials. Given the required training, cost of equipment and limited community need, this level of service is only provided by larger communities in Alberta.

As discussed in the Community Risk Overview, the County has large quantities of hazardous materials traveling across its boundaries and through communities in pipelines, railcars, and transport vehicles. As a result, the probability of an incident involving these materials is higher than many Alberta municipalities. CRFRS provides an operations level of service, with several its members trained to a technician level. CRFRS should continue to provide the operations service level given the quantity of hazardous materials present in the County. This level of service meets the immediate need to initiate rescue and evacuation, as well as manage limited releases with defensive techniques.

CRFRS receives an industry grant to maintain a limited number of staff at the technician level, who can provide additional technical support in the event of a dangerous goods response. In the event of a large-scale release of hazardous materials that is clearly beyond the capability of the CRFRS, assistance from private industry and larger municipal fire departments should be considered.

3.7.7 Technical Rescue

Rescue operations are often unique situations that require specialized equipment and training to ensure the responders maintain the competencies to safely execute the rescue. The challenge in maintaining these skills is the low frequency of the events. As a result, fire departments offering technical rescue services must provide adequate training to maintain competencies and equipment.

CRFRS offers the following technical rescue services:

- MVC rescue (technician)
- Low-angle rescue (technician)
- Water rescue (technician)
- Ice rescue (technician)
- Confined space rescue (awareness)
- Farm rescue (operations)

MVCs and associated rescue services are requested nearly daily across the County. The response statistics do not differentiate rescue type, making it difficult to identify the frequency of other rescue events. Rescue service related SOGs identify that any firefighters involved in the use of the specialized equipment and tactics must be certified in the respective

rescue specialty. The competency of first responders should be monitored and renewed as certification alone does not ensure competency is maintained. Given the low frequency of these events, training frequently to maintain competency is required.

CRFRS also responds to industrial incidents. Local fire departments are often requested to respond to industrial sites in the event of a rescue situation that is beyond the site's emergency response team (ERT) capabilities. Many fire departments have worked together with industry and government to assist with funding for equipment and training to a mutual benefit. Often local fire departments will be invited to actively participate in emergency exercises conducted by local industry or agencies, which is beneficial for all parties. Many of the industrial sites across the County involve processes involving hazardous materials. Where practical, the CRFRS should request response plans from these industries. In addition, CRFRS responders should exercise the greatest caution not to place themselves at risk if there is not a clear understanding the hazards rescuers may face.

Finally, the Rocky Mountain House Search and Rescue Services offer rope rescue, swift water rescue and ice rescue. Several of the rescue SOGs suggest the incident commanders should consider activation of Search and Rescue. The services appear to be overlapping in some cases. While the two agencies have a memorandum of understanding (MOU), the MOU does not identify roles, responsibilities, and event types each will follow.

Further, the CRFRS are approved to provide drone services for search and rescue purposes. On the face of it, this program seems it would be aligned more with the services provided by Rocky Mountain House Search and Rescue. Similarly, there are several specialty services such as water rescue, ice rescue and rope rescue that require clearly defined operating procedures and role definition between the agencies.

Observation #14: *CRFRS provide rescue services also provided by Rocky Mountain Search and Rescue. This may create jurisdictional and role confusion in the event of a rescue. It may also result in the duplication of training and equipment.*

Recommendation #14: Clarify roles and operating procedures with Rocky Mountain Search and Rescue.

(Suggested completion: 12-24 months)

Potential efficiencies or improved effectiveness may be found by clearly defining the jurisdiction, roles, responsibilities, and operating procedures when responding to rescue events. At the very least, this process will improve the interoperability and relationships between the two agencies.

3.7.8 Citizen Assist

Fire departments play an important but often unrecognized role in the social safety net of communities. When citizens perceive an emergency or an urgent request for assistance, the agency most frequent called to help is the fire department. In reviewing the response data from all Stations, this response type is occurring but is infrequent. CRFRS should continue to

provide this service where practical to help in their communities. It is a value-added service of considerable value to those who are making the request.

3.8 Emergency Management Program and Emergency Coordination Centre (ECC)

The Alberta Emergency Management Act legislates that all municipalities are responsible for managing the first response to an emergency event. They are required to develop emergency response plans and programs approved by the Province. The Clearwater Regional Emergency Management Agency (CREMA) is a joint undertaking including the Town of Rocky Mountain House, Village of Caroline, Clearwater County, and the Summer Village of Burnstick Lake. The CRFRS is assigned several roles/tasks in the Plan. These functions include:

- Assignment to ECC or on-scene operations
- Provide initial situation/damage reports as per field unit's observations and reports from the public
- Provide supplies, equipment, and personnel as requested
- Contain and control hazardous materials
- Provide and coordinate fire and rescue services
- Provide limited response to search and rescue off-road situations, and coordinate heavy rescue operations
- Augment warning system by providing siren-equipped and/or public address mobile units, and/or door-to-door warning
- Support other public safety operations
- Advise evacuation whenever necessary to protect lives and property
- Emergency management events are infrequent but resource intensive. As identified above, the CRFRS is assigned several functions in the Plan. As a POC fire department, sustaining a prolonged multi-day response may be a challenge as conflicts between their personal and other work obligations emerge. Further, plans frequently identify fire department staff as the assigned resource for multiple tasks during large scale events. CRFRS must retain the capacity to respond to other emergencies occurring concurrently during a large event. Clearwater County should take these limitations into consideration in developing the CREMA Plan.

3.9 Critical Task Analysis

The purpose for completing a critical task analysis is to consider whether CRFRS response policy and common risks are aligned. In other words, are enough firefighters typically responding to complete the critical tasks on an emergency scene in a safe and timely manner. Considerable research was undertaken by the National Institute of Standards and Technology (NIST) to identify the optimum number firefighters in a fire company necessary for the most effective completion of the over 22 essential fire ground tasks at a typical single-family house fire.

A fire company is defined as the team of firefighters assigned to a fire apparatus. On average, a four-member crew operating on a structure fire completed all the tasks seven minutes faster than a two-person crew. The four-person crew completed the same number of fire ground tasks five minutes faster than the three-person crew. Adding a fifth person to the crews did not decrease overall fire ground task times. Based on critical tasks and population densities, NFPA 1720 recommends the following specific minimum number of firefighters are assembled to begin that for a standard single-house residential fire.

Table 10: NFPA 1720 Standard for Fire Suppression Operations by Volunteer Fire Departments

Demand Zone	Demographics	Min. Staff respond
Urban area	>1000 people/mi^2	15
Suburban area	500–1000 people/mi^2	10
Rural area	<500 people/mi^2	6
Remote area	Travel distance ≥ 8 mi^2	4
Special risks	Determined by AHJ	Determined by AHJ based on risk

With a population density of 1,303 people/mi^2, Rocky Mountain House, Station 60, is in an urban demand zone and requires a minimum staff of 15. Caroline, Station 30, is in a suburban demand zone with a density of 673 people/mi^2, requiring 10 responders to meet the Standard. The smaller communities of Leslieville, Condor and Nordegg, Stations 10, 20 and 50 respectively, are in a rural demand zone requiring six firefighters responding to meet NFPA 1720 standards. Large tracts of forestry across Clearwater County falls into the remote classification and would require a minimum of four firefighters responding to meet the minimum staffing requirements outlined in NFPA 1720.

CRFRS has completed a partial task analysis. SOG 671, Working Structure Fires identifies service level and tasks linked to the number of responding firefighters.

Figure 8: SOG 671 Task Assignment

Structure Fire

Less than 4 for staffing:

- 2 firefighters: Officer tags hydrant, exterior operations.
- 3 firefighters: Seat 3: Driver's side firefighter tags hydrant, officer stretches an attack line, exterior operations.

Offensive Operations – Interior Attack on Working Fire with Hydrant, First Due Company (5 person)

Seat #	Position	Assignment	Tools
1	Officer	Initial radio report, assume command, 360 size-up, determine strategy, select appropriate first line and placement, collect Helmet Tags for the Apparatus Tag. *(back up nozzle man on fast action only)*	PPE, SCBA, portable radio, flashlight, gas shutoff tool, thermal imaging camera, hand tool
2	Pump Operator	Drop off hydrant man, apparatus placement, develop and secure water supply, connect supply line, monitor pump panel and radio, BA control for unit crews, generator/lighting	PPE, portable radio, flashlight
3	Nozzle	Pulls first line, nozzle on first line	PPE, SCBA, portable radio, flashlight, hand tool,
4	Hydrant	Tag hydrant (if required), pull back up line, set up PPV fan, door control	PPE, SCBA, portable radio, flashlight, hand tool
5	5th Man	Assist in supply hose placement for lays longer then 400ft or narrow roadway, mask up, back nozzle man on first line, forcible entry.	PPE, SCBA, portable radio, flashlight, hand tool

Offensive Operations – Interior Attack on Working Fire with Hydrant, First Due Company (4 person)

Seat #	Position	Assignment	Tools
1	Officer	Initial report, assume command, 360 size-up, determine strategy, select appropriate first line and placement, collect PAS and Radio tags for the IC Board. *(back up nozzle man on fast action only)*	PPE, SCBA, portable radio, flashlight, gas shutoff tool, thermal imaging camera, hand tool
2	Pump Operator	Drop off hydrant man (if needed), apparatus placement, develop and secure water supply, connect supply line, monitor pump panel and radio, BA control for unit crews, set up PPV fan, generator/lighting	PPE, SCBA available, portable radio, flashlight
3	Nozzle	Pulls first line, nozzle on first line	PPE, SCBA, portable radio, flashlight, hand tool,
4	Hydrant	Tag hydrant (if required), back nozzle man on first line, forcible entry.	PPE, SCBA, portable radio, flashlight, hand tool

Identifying critical tasks and level of service, such as when to move to interior operations, based on the number of firefighters responding is an important approach particularly for POC response models, as the number of responders is somewhat unpredictable. In general, CRFRS policies are up to date and comprehensive. The guidelines identify operational and tactical priorities. However, the critical task analysis has not been complete with the same level of detail as defined in SOG 671. This would typically be completed as an element of the SOC policy. An SOC policy provides additional clarity with respect to response capacity based on critical tasks for specific all response types and response time benchmarks.

3.10 Fire Inspections, Investigations and Public Education Program

As departments increase their emphasis on fire prevention activities, communities are seeing a significant reduction in fire-related losses. In Canada alone, deaths caused by fire have been reduced over the last 100 years from 3500 deaths per year to 330 each year. Although difficult

to measure, effective fire prevention programs reduce fire related deaths and property loss proportionately to the resources committed. Data collection and analysis will determine the effectiveness of these programs and their impact on the overall reduction of losses.

3.10.1 Fire Inspections

Modern building codes including life safety design and operating requirements are key component of risk management. Cyclical fire inspection programs for high risk buildings ensure these systems continue to function throughout the life of the building. This is especially important for high occupancy and special purpose buildings such as apartment buildings, hospitals, seniors housing and schools.

The Alberta Building Code (ABC) and the Alberta Fire Code (AFC) are based upon the National Model Building and Fire Code of Canada. The Alberta Codes set out the technical provisions regulating activities related to:

- The construction, use or demolition of buildings and facilities
- The condition of specific fire and life-safety elements of buildings and facilities
- The design or construction of facilities related to certain hazards
- The fire protection measures for the current or intended use of buildings

The AFC requires regular inspections for fire alarm and sprinkler systems, updated fire and emergency evacuations plans, unobstructed means of egress and other fire life-safety systems based upon the Major Occupancies Classifications and other criteria contained in the AFC. The AFC does not legislate the frequency or cycle for fire inspections as this is left to the authority having jurisdiction. In all cases, it is the property owner's responsibility to comply with the Codes.

Clearwater County and Rocky Mountain House are accredited under the Safety Codes Act for the Fire Discipline and have established quality management plans (QMPs) to guide their fire prevention program. All Headquarters staff are Fire Safety Code Officers (SCOs). Currently, most of the fire inspections are completed by the Deputy Chief, due to the current vacant Assistant Chief position.

As Table 11 illustrates, the number of fire inspections completed by the CRFRS has dropped over the past year because of the direction taken in the new QMP. The most recent version of the QMPs of both municipalities changed the frequency of fire inspections to on request or complaint only. Further, any inspections completed within the Rocky Mountain House must be requested from the Town and communicated to CRFRS. This process limits the access of CRFRS SCOs to properties that should be inspected.

Table 11: CRFRS Fire Prevention Services

Fire Prevention Activities	2016	2017	2018	2019	2020 *YTD (Sept 8)
Inspections	34	28	51	63	19
Investigations	51	37	46	45	25
Fire Prevention Education	24	28	44	39	4

3.10.2 Fire Pre-Plans

Fire pre-plans include information regarding the construction type, occupancy, building status, emergency contacts, utility shutoffs, fire suppression and detection systems, exposure information, water supply availability, access problems and any other hazards. CRFRS actively conducts fire pre-planning of high-risk occupancies. This is an ongoing process that could also be supported by implementing a cyclical fire inspection program for identified properties.

Observation #15: *The CRFRS has reduced the frequency of fire inspections in Rocky Mountain House and Clearwater County. High risk occupancies are required to maintain life-safety systems. Cyclical fire inspection programs are the most effective method of ensuring the ongoing function of these systems. Failure of the life-safety systems increase the risk of injury or death to occupants and firefighters and increases the risk of property loss. An inspection program specifically focused on select high-risk occupancies would also support a systematic approach to a fire preplanning.*

Robust inspection programs consume considerable capacity. Coupled with additional tasks, it is unlikely the Deputy Chief's position could support this service adequately. Additional support is required to provide inspection services adequate capacity.

Recommendation #15: Implement a cyclical fire inspection program for industrial and high occupancy properties

(Suggested completion: 0-24 months)

The County and Town should consider modifying their QMPs with the aim of developing a more robust fire inspection program focused on a limited number of high-risk occupancies. This process will help to ensure life-safety equipment and system requirements are maintained throughout the operation of a high life-safety risk property. It will also assist in fire department preplanning for responses to high to extreme risk properties. The program could be developed as a combination of self-reporting requirements and inspections conducted by a Fire SCO. If implemented, it does require additional capacity and effort by the CRFRS Headquarters staff to maintain a robust inspection and pre-planning program.

3.10.3 Fire Investigations

All fires causing injury, death and property loss should be investigated in Alberta. The Alberta Government maintains a fire incident database and provides trend analysis to identify specific prevention campaigns based upon leading fire causes. Examples include cooking safety, smoke alarm maintenance, and fire prevention.

CRFRS SCGs state that fire investigations will be completed for all fires resulting in injuries, death, or dollar loss. Typically conducted by HQ staff, fire investigation services are provided in the County, Rocky Mountain House, and Caroline. CRFRS SOG 304 describes the role, level of training and processes used to safely conduct investigations.

Investigations are conducted to identify the cause an origin of fires. As discussed earlier, it may be helpful for CRFRS to classify fire statistics in a more detailed approach. Currently all structure and vehicle fires are combined. This methodology makes it difficult to identify changes in trends when reviewing data over longer periods of time. Fire investigation results can also assist in identifying fire trends in the community. CRFRS should consider refining their fire data in a way that informs fire prevention efforts and future resource planning in a meaningful way.

3.10.4 Fire Prevention Public Education

Public education programs and active involvement in the community are important efforts that inform and engage citizens to think about fire safety and risk reduction. CRFRS staff support several fire prevention and education activities including:

- FireSmart program
- Station tours
- Attending community events

All survey and interview participants identified that most citizens do not access services and are limited in their understanding of the CRFRS services and operations. Public education programs and events provide CRFRS firefighter the opportunity to interact with citizens under non-urgent circumstances. CRFRS SOGs provide adequate explanation and guidance to firefighters participating in these events. CRFRS should continue to provide these value-added services in their communities.

Many primarily POC fire departments struggle to find the capacity to have firefighters engage in formalized public education programs. Some fire departments have approached this challenge by enlisting the help of volunteer fire educators. The Sooke Volunteer Fire Department developed an innovative approach by recruiting the spouses of their current volunteer members into the Department to teach fire safety. The new team of fire prevention public educators were trained to the NFPA Fire and Life Safety Educator standard. Volunteer public educators may be found in groups of retired teachers, retired firefighters or students wanting education experience.

Local school divisions are typically great supporters of fire safety. Several public education resources are available for pre-school and elementary school age children. Teachers have free access to several free fire safety programs and materials[12]. Further, several municipal fire departments in Alberta attempt to target specific elementary grades to provide a host of programs, including but not limited to:

- Fire escape planning
- Fire evacuation drills
- Kitchen safety
- Holiday safety

Numerous examples of these programs may be found in online resources. As an example, the NFPA provides a host of fire prevention resources at https://www.nfpa.org/Public-Education/Staying-safe/Preparedness/Fire-Prevention-Week/Educate.

3.11 Mutual Aid and Other Service Agreements

Large fire events or emergencies with multiple casualties will quickly outstrip the capacity of most municipal fire departments in Alberta. This is especially true for fire departments with POC firefighters that may not be able to sustain a prolonged multi-day response as other commitments may conflict with firefighting activities. As a result, mutual aid and automatic aid agreements are a necessary component in adding service capacity in these low frequencies but potentially high or extreme consequence events.

Clearwater County has several fire service and mutual aid agreements with surrounding municipalities and Alberta Agriculture and Forestry including the following:

- Inter-municipal Regional Fire Services Agreement between Clearwater County, the Village of Caroline, and the Town of Rocky Mountain House (executed in 2020)
- Town of Sundre (executed in 2015)
- County of Wetaskiwin No. 10 (executed in 2019)
- Summer Village of Burnstick Lake (executed in 1994)
- Lacombe County (executed in 2007)
- Red Deer County (executed in 2003)
- Stoney FN (executed in 1995)
- Town of Eckville (executed in 1986)
- Town of Sylvan Lake (executed in 2013)
- Ministry of Agriculture and Forestry (executed annually)
- Yellowhead County (executed in 2016)
- Ponoka County (executed in 2016)

[12] *https://teachers-ab.libguides.com/firesafety*

All mutual aid agreements should generally be reviewed and adjusted as required on a five-year cycle if possible. Further, where applicable, the agreements could be updated to include automatic aid. Automatic aid could be discussed with all partners for specific event types.

Mutual aid is an efficient approach to adding capacity for POC fire departments. Additional regional partners to consider approaching as potential mutual or automatic aid providers include:

- Mountain View County
- Brazeau County
- Sunchild First Nation
- Ochiese First Nation

3.12 Assets and Infrastructure

Infrastructure refers to fire stations and other fixed assets or facilities that CRFRS occupies and uses.

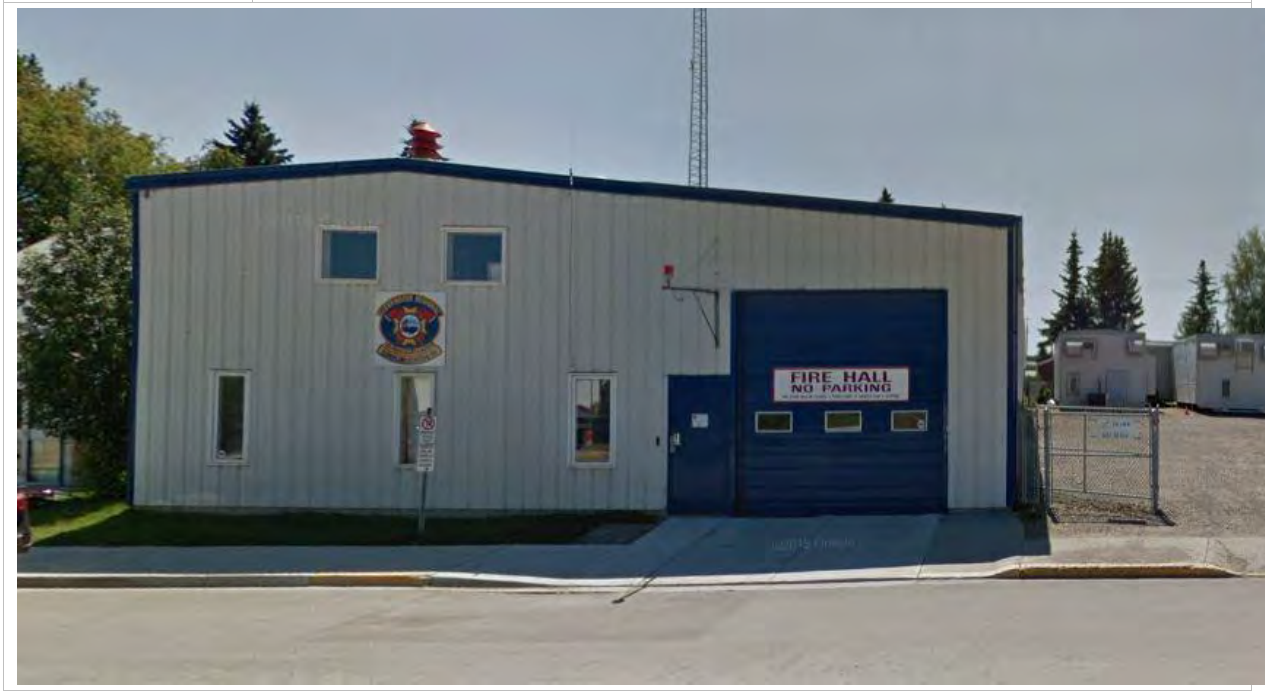
3.12.1 Fire Station Overview and Assessment

Regional Headquarters			
Address:	4504 42 Avenue, Rock Mountain House		
Use:	Headquarters – Administrative Office		
Bays:	3	Unit Capacity:	13
Comments:	This office serves as the administrative office for the Director of Emergency and Legislative Services, Regional Fire Chief, Deputy Fire Chief, Assistant Fire Chief and Administrative Assistants. This facility is currently meeting the needs of CRFRS; however office space is at capacity. Large garage and equipment areas are within the property being utilized for storage, training and testing of equipment.		

Hamlet of Leslieville (Station 10)			
Address:	103 3rd Avenue, Leslieville		
Use:	Station 10 – Fire Hall		
Bays:	2	Unit Capacity:	4
Comments:	This facility serves as the operational hall for firefighting staff in Leslieville. The fire hall is centrally located in the Hamlet of Leslieville. This station is at the end of its functional life and has been identified for replacement with a combined 3-bay Public Works facility anticipated to be completed by the end of 2020. The new facility will remain in Leslieville.		

Hamlet of Condor (Station 20)			
Address:	390017 Range Road 4-5, Condor		
Use:	Station 20 – Public Services Building (multi-use facility)		
Bays:	3	Unit Capacity:	6
Comments:	This facility serves as the operational hall for firefighting staff in Condor. The facility is shared with Public Works and Agriculture Services. This is a new Public Services building with 5 bays and 16000 square feet of functional space. Most of this building is allocated for CRFRS use.		

Village of Caroline (Station 30)			
Address:	5027 50 Street, Caroline		
Use:	Station 30 – Fire Hall		
Bays:	3	Unit Capacity:	6
Comments:	This facility serves as the operational hall for firefighting staff in Caroline. Caroline Fire Station 30 is centrally located in the Village of Caroline. This facility is owned and maintained by the Village of Caroline.		



Hamlet of Nordegg (Station 50)			
Address:	8008 Quarry Road, Nordegg		
Use:	Station 50 – Public Services Building		
Bays:	3	Unit Capacity:	4
Comments:	This facility serves as the operational hall for firefighting staff in Nordegg and is co-located within the Nordegg Public Services building which opened in 2012. This facility is shared with Clearwater County Public Works staff and equipment, Alberta Health Services ambulance, and Rocky Mountain House Search and Rescue. Office space is also shared with Peace Officers, RCMP and serves an alternate Emergency Management Centre.		

Town of Rocky Mountain House (Station 60)			
Address:	4920 52 Street, Rocky Mountain House, AB		
Use:	Station 60 – Fire Hall		
Bays:	3	Unit Capacity:	6
Comments:	This facility serves as the operational hall for firefighting staff in Rocky Mountain House. This fire station is an older facility built in 1983 that remains functional but is at capacity for the use of CRFRS. Maintenance of this facility is the responsibility of the Town of Rocky Mountain House		

Observation #16: *CRFRS provides fire and emergency response out of five fire stations geographically located within Clearwater County. Two of the current fire stations (Condor station 20, and Nordegg station 50 are modern and fully functional for the needs of CRFRS for the foreseeable future.*

Caroline station 30, while small by modern fire hall specifications, remains functional for CRFRS. This fire station has been identified for replacement; however no capital funding has been allocated to date.

Rocky Mountain House is fully functional, however is presently at capacity for safe and effective utilization by CRFRS. Future demands will be challenged with the current facility.

Recommendation #16: Conduct a conditional and functional assessment of the Rocky Mountain House Fire Station and Caroline Fire Station

(Suggested completion: 0-12 months)

The Town of Rocky Mountain House and Village of Caroline should work closely with CRFRS administration to conduct a functional, building envelop and general condition assessment anticipating present and future needs of CRFRS. This building assessment should include a building envelope study along with a mechanical, electrical, structural assessment, and building life expectancy.

3.12.2 Training Facilities

CRFRS conducts onsite 'hands-on' training as well as classroom-based training at each respective fire hall.

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Along with onsite training capabilities at each fire hall, CRFRS also can book time at the Red Deer County Fire Training facility which provides opportunity to conduct "live fire" training. This facility contains the necessary training props and equipment that serves as the primary training ground where CRFRS firefighters, ranging from recruits to senior officers, attend.

CRFRS has proposed plans to build and support a new fire training facility in conjunction with the new Leslieville fire station. This facility will be able to provide the necessary training for CRFRS staff while keeping both equipment and staff within their region. This proposal has not yet been approved.

3.13 Equipment

3.13.1 Apparatus and Light Duty Vehicles

Apparatus and light-duty vehicles are typically the largest asset expenditures for any department. Purchasing and managing these assets requires strong fiscal responsibility to endure public and council scrutiny. Currently, CRFRS has millions of dollars invested in vehicles and equipment. The lifespan of apparatus varies depending on its type and use.

County also provides regular fleet maintenance and Commercial Vehicle Inspections (CVIP) for all apparatus. Discussions with the Fire Chief indicate that the cost sharing agreement for shared apparatus is working well. Details of the ownership and cost-sharing allocation is for CRFRS apparatus and equipment is outlined within the Intermunicipal Regional Fire Rescue Services Agreement.

Table 12: Fire Apparatus Service Schedule (Fire Insurance Grading)

Apparatus Age (Yrs.)	Major Cities [3]	Medium Sized Cities [4]	Small Communities[5] and Rural Centres
0 – 15	First Line Duty	First Line Duty	First Line Duty
16-20	Reserve	2nd Line Duty	First Line Duty
20-25[1]	No Credit in Grading	No Credit in Grading or Reserve[2]	No Credit in Grading or 2nd Line Duty[2]
26-29[1]	No Credit in Grading	No Credit in Grading or Reserve[2]	No Credit in Grading or Reserve[2]
30+	No Credit in Grading	No Credit in Grading	No Credit in Grading

[1]All listed fire apparatus 20 years of age and older are required to be service tested by recognized testing agency on an annual basis to be eligible for grading recognition (NFPA 1071).

[2]Exceptions to age status may be considered in a small to medium sized communities and rural centres conditionally, when apparatus condition is acceptable, and apparatus successfully passes required testing.

[3]Major Cities are defined as an incorporated or unincorporated community that has:

- *a populated area (or multiple areas) with a density of at least 400 people per square kilometer; AND*
- *a total population of 100,000 or greater.*

[4]Medium Communities are defined as an incorporated or unincorporated community that has:

- *a populated area (or multiple areas) with a density of at least 200 people per square kilometer; and/or*
- *a total population of 1,000 or greater.*

[5]Small Communities are defined as an incorporated or unincorporated community that has:

- *no populated areas with densities that exceed 200 people per square kilometer; AND*
- *does not have a total population more than 1,000.*

Although both NFPA and FUS have criteria on re-classifying or retiring apparatus, modifications or upgrades may be required based on age or heavy usage. For example,

- Engines: 16-20 years frontline (FUS & NFPA), but can be reduced due to high usage
- Rescue Truck: 15 years frontline (NFPA) but can be reduced due to high usage

In addition, the National Fire Protection Association Standard (NFPA) 1901: Standard for Automotive Fire Apparatus recommends the following:

D.1 General

To maximize fire fighter capabilities and minimize risk of injuries, it is important that fire apparatuses be equipped with the latest safety features and operating capabilities.

In the last 10 to 15 years, much progress has been made in upgrading functional capabilities and improving the safety features of fire apparatus. Apparatuses more than 15 years old might include only a few of the safety upgrades required by the recent editions of the NFPA fire department apparatus standards or the equivalent Underwriters Laboratories of Canada (ULC) standards. Because the changes, upgrades, and fine tuning to NFPA 1901 have been

truly significant, especially in the area of safety, fire departments should seriously consider the value (or risk) to fire fighters of keeping fire apparatus more than 15 years old in first-line service. It is recommended that apparatus more than 15 years old that have been properly maintained and that are still in serviceable condition be placed in reserve status; be upgraded in accordance with NFPA 1912; and incorporate as many features as possible of the current fire apparatus standard (See Section D3 of Standard). This will ensure that, while the apparatus might not totally comply with the current editions of the automotive fire apparatus standards, many of the improvements and upgrades required by the current editions of the standards are available to the fire fighters who use the apparatus. Apparatuses that were not manufactured to the applicable NFPA fire apparatus standards or that are over 25 years old should be replaced.

The array of apparatus and equipment is deemed adequate for the type of service the department provides and there are no foreseeable issues. The following tables summarize CRFRS' current apparatus and light-duty equipment inventory.

***Note:** The lifespan and replacement of each unit is based on information provided at time of this report relating to CRFRS' apparatus replacement plan[13].*

Leslieville Station 10 Apparatus and Vehicles		
Unit Number:	**100**	
Year/Make:	2015 Ford F550	
Lifespan (yrs.):	10 – 15 Years	
Replacement (yr.):	2030	
Type:	Type 6, Light Brush Truck	
Pump Capacity:	219 Imp GPM	
Tank Capacity:	285 Imp Gallons	
Usage:	1st due for wildland calls	

[13] *See Section 3.13.2 Fire Apparatus Replacement and Dispersal, Page 92*

Leslieville Station 10 Apparatus and Vehicles		
Unit Number:	**101 Engine**	
Year/Make:	1998 Freightliner Superior Pump *Replacement unit has been ordered. Delivery expected in 2020.	
Lifespan (yrs.):	20	
Replacement (yr.):	2040	
Type:	Type 1	
Pump Capacity:	1250 Imp GPM	
Tank Capacity:	1000 Imp Gallons	
Usage:	1st due for fire responses	
Unit Number:	**102 Tender**	
Year/Make:	2002 Freightliner *Replacement unit has been ordered*. Delivery expected in 2020.	
Lifespan (yrs.):	20	
Replacement (yr.):	2040	
Type:	Tender	
Pump Capacity:	79 Imp GPM	
Tank Capacity:	1700 Imp Gallons	
Usage:	Tender operations	
Unit Number:	**103 Light Rescue**	
Year/Make:	2006 Ford F550	
Lifespan (yrs.):	15 – 20	
Replacement (yr.):	2024	
Type:	Light Rescue Truck	
Usage:	1st due to motor vehicle incidents	

Condor Station 20		
Unit Number:	**201 Engine**	
Year/Make:	2002 Freightliner E-One *Replacement unit 205 has been ordered*. Delivery expected in 2022.	
Lifespan (yrs.):	20	
Replacement (yr.):	2022	
Type:	Type 3 Engine	
Pump Capacity:	400 Imp GPM	
Tank Capacity:	400 Imp Gallons	
Usage:	1st due for fire responses	
Unit Number:	**202 Tender**	
Year/Make:	2006 Freightliner M2	
Lifespan (yrs.):	20	
Replacement (yr.):	2026	
Type:	Tender	
Pump Capacity:	265 Imp GPM	
Tank Capacity:	1500 Imp Gallons	
Usage:	Tender operations	
Unit Number:	**203 Rescue**	
Year/Make:	2008 Fore F550	
Lifespan (yrs.):	15 - 20	
Replacement (yr.):	2024	
Type:	Light Rescue Truck	
Usage:	First due in for fire response	
Unit Number:	**203 Heavy Rescue**	
Year/Make:	Trailer: 2018	
Lifespan (yrs.):	N/A	
Replacement (yr.):	N/A	
Type:	Trailer	
Usage:	First due in for MVC response	

Condor Station 20		
Unit Number:	**206 UTV**	
Year/Make:	2012 Polaris Ranger 6 x 6	
Lifespan (yrs.):	15	
Replacement (yr.):	2020	
Usage:	Front country rescue and wildfire responses	

Caroline Station 30		
Unit Number:	**300 Light Brush Truck**	
Year/Make:	2011 Ford F550	
Lifespan (yrs.):	10 – 15	
Replacement (yr.):	2027	
Type:	Light Brush Engine	
Pump Capacity:	99 Imp GPM	
Tank Capacity:	300 Imp Gallons	
Usage:	Wildland response	
Unit Number:	**301 Engine**	
Year/Make:	2003 Freightliner FL80 *Replacement ordered, delivery date 2020	
Lifespan (yrs.):	15 – 20	
Replacement (yr.):	2020	
Type:	Type 1 Engine	
Pump Capacity:	1250 Imp GPM	
Tank Capacity:	1000 Imp Gallons	
Usage:	1st due fire responses	
Unit Number:	**302 Tender**	
Year/Make:	2006 Freightliner FL70	
Lifespan (yrs.):	20	
Replacement (yr.):	2023	
Type:	Tender	
Pump Capacity:	79 Imp GPM	
Tank Capacity:	1700 Imp Gallons	
Usage:	Tender operations	

Caroline Station 30		
Unit Number:	**303 Rescue** *Replacement unit 313 ordered, delivery date 2020	
Year/Make:	2006 Ford F550	
Lifespan (yrs.):	15 – 20	
Replacement (yr.):	2020	
Type:	Light Rescue Truck	
Usage:	1st due for motor vehicle incidents and front/back county calls	
Unit Number:	**306 UTV**	
Year/Make:	2008	
Lifespan (yrs.):	15	
Replacement (yr.):	2020	
Type:	Front country and wildfire responses	
Unit Number:	**313 Rescue/Pump**	**(2020 delivery – replaces 301/303)**
Year/Make:	2020 Maxi Metal	
Lifespan (yrs.):	15 – 20	
Replacement (yr.):	2040	
Type:	Rescue / Engine	
Pump Capacity:	NA	
Tank Capacity:	NA	
Usage:	1st due for motor vehicle incidents and fire responses	

Nordegg Station 50		
Unit Number:	**500 Light Brush Engine** *Replacement to be ordered in 2020, delivery date expected 2022	
Year/Make:	2009 / Ford / Rosenbauer	
Lifespan (yrs.):	10 – 15	
Replacement (yr.):	2020	
Type:	Type 6	
Pump Capacity:	99 Imp GPM	
Tank Capacity:	300 Imp Gallons	
Usage:	1st due wildland response	

Nordegg Station 50		
Unit Number:	**502 Tender**	
Year/Make:	2009 Freightliner Rosenbauer M2	
Lifespan (yrs.):	20	
Replacement (yr.):	2021	
Type:	Tender	
Pump Capacity:	1250 Imp GPM	
Tank Capacity:	1700 Imp Gallons	
Usage:	Tender operations	
Unit Number:	**506 UTV**	
Year/Make:	2012 Polaris Ranger 6x6	
Lifespan (yrs.):	15	
Replacement (yr.):	2027	
Type:	UTV	
Usage:	Front country rescue and wildfire responses	
Unit Number:	**513 Rescue/Pump**	
Year/Make:	2008 Rosenbauer/Spartan	
Lifespan (yrs.):	20	
Replacement (yr.):	2028	
Type:	Rescue / Engine	
Pump Capacity:	1250 Imp GPM	
Tank Capacity:	750 Imp Gallons	
Usage:	1st due to all motor vehicle incidents and fire responses	

Rocky Mountain House Station 60		
Unit Number:	**600 Light Brush Engine**	
Year/Make:	2008 Ford	
Lifespan (yrs.):	10 - 15	
Replacement (yr.):	2023	
Type:	Type 6	
Pump Capacity:	100 Imp GPM	
Tank Capacity:	300 Imp Gallons	
Usage:	Rapid wildland fire unit	
Unit Number:	**601 Engine / Tender**	
Year/Make:	2017 Freightliner / HUB	
Lifespan (yrs.):	20	
Replacement (yr.):	2037	
Type:	Type 1 Engine	
Pump Capacity:	1250 Imp GPM	
Tank Capacity:	1700 Imp Gallons	
Usage:	Primary 1st due Engine for rural fire response	
Unit Number:	**602 Tender**	
Year/Make:	2002 Freightliner	
Lifespan (yrs.):	20	
Replacement (yr.):	2023	
Type:	Tender	
Pump Capacity:	75 Imp GPM	
Tank Capacity:	1700 Imp Gallons	
Usage:	Tender operations	
Unit Number:	**604 Aerial**	
Year/Make:	2002 E-ONE	
Lifespan (yrs.):	20	
Replacement (yr.):	2023	
Type:	Quint	
Pump Capacity:	2000 Imp GPM	
Tank Capacity:	300 Gallons	
Usage:	1st Due on Fire responses in Town of Rocky Mountain House.	

Rocky Mountain House Station 60		
Unit Number:	**607 Water Rescue**	
Year/Make:	2019 Outlaw Eagle Tomcat	
Lifespan (yrs.):	10	
Replacement (yr.):	2029	
Type:	Boat/Trailer	
Pump Capacity:	N/A	
Tank Capacity:	N/A	
Usage:	Water/ice rescue. Training.	
Unit Number:	**613 Rescue/Pump**	
Year/Make:	2016 Rosenbauer	
Lifespan (yrs.):	20	
Replacement (yr.):	2036	
Type:	Rescue / Engine	
Pump Capacity:	1250 Imp GPM	
Tank Capacity:	900 Imp Gallons	
Usage:	First due for motor vehicle incidents, 2nd due fire responses	

Headquarters		
Unit Number:	**900 Command Unit**	
Year/Make:	2018 Chevrolet Tahoe	
Lifespan (yrs.):	7 /200,000 kilometres	
Replacement (yr.):	2025	
Usage:	Fire Chiefs unit	
Unit Number:	**901 Command Unit**	
Year/Make:	2013 Chevrolet Silverado	
Lifespan (yrs.):	7 /200,000 kilometres	
Replacement (yr.):	2022 - 2025	
Usage:	Battalion Chief unit	

Headquarters		
Unit Number:	**902 Command Unit**	
Year/Make:	2014 Chevrolet Silverado	
Lifespan (yrs.):	7 /200,000 kilometres	
Replacement (yr.):	2021 - 2028	
Usage:	Assistant Fire Chief unit	
Unit Number:	**903 Command Unit**	
Year/Make:	2016 Chevrolet Silverado	
Lifespan (yrs.):	7 /200,000 kilometres	
Replacement (yr.):	2023 - 2030	
Usage:	Assistant Fire Chief unit	
Unit Number:	**904 Command Unit**	
Year/Make:	2014 Chevrolet Tahoe	
Lifespan (yrs.):	7 /200,000 kilometres	
Replacement (yr.):	2021 - 2028	
Usage:	Deputy Fire Chief unit	
Unit Number:	**906 Command Unit**	
Year/Make:	2011 Chevrolet Silverado	
Lifespan (yrs.):	7 /200,000 kilometres	
Replacement (yr.):	2020 - 2027	
Usage:	Battalion Chief unit	

Headquarters		
Unit Number:	**908 Command Unit**	
Year/Make:	2007 Chevrolet Silverado	
Lifespan (yrs.):	7 /200,000 kilometres	
Replacement (yr.):	2020 - 2027	
Usage:	Battalion Chief unit	
Unit Number:	**910 Resource Trailer**	
Year/Make:	2009 American Hauler	
Lifespan (yrs.):	15 – 20	
Replacement (yr.):	2024 - 2029	
Usage:	Hazmat – Cascade System	
Unit Number:	**911 Mobile Command**	
Year/Make:	2010 Travelaire	
Lifespan (yrs.):	15 – 20	
Replacement (yr.):	2025 - 2030	
Usage:	Command Post	
Unit Number:	**912 WUI Trailer**	
Year/Make:	2009 American Hauler	
Lifespan (yrs.):	15 – 20	
Replacement (yr.):	2024 - 2029	
Usage:	Pumps and hoses for WUI fires	

Headquarters		
Unit Number:	**913 Spare Engine**	
Year/Make:	1996 Superior	
Lifespan (yrs.):	20	
Replacement (yr.):	N/A	
Type:	Type 1 Engine	
Pump Capacity:	1250 Imp GPM	
Tank Capacity:	1000 Imp Gallons	
Usage:	Mechanical spare	
Unit Number:	**914 Training Props Trailer**	
Year/Make:	2013	
Lifespan (yrs.):	15 – 20	
Replacement (yr.):	2023 – 2033	
Usage:	Storage for training props and supplies.	
Unit Number:	**915 Public Education Trailer**	
Year/Make:	2015	
Lifespan (yrs.):	15 – 20	
Replacement (yr.):	2030 - 2035	
Usage:	Storage for public education equipment and supplies.	

3.13.2 Fire Apparatus Replacement and Dispersal

NFPA 1901 Standard for Automotive Fire Apparatus recommends that fire apparatus should respond to first alarms for the first 15 years of service, with the expectation that they perform as designed 95% of the time. For the next five years it should be held in reserve for use at large fires or used as a temporary replacement for out-of-service first line apparatus.

ULC follows the NFPA standard with the exception that it may award full credit for a fire apparatus older than 15 years, but not more than 20 years, in remote locations only if the piece of equipment is deemed in excellent condition and all necessary upgrades are done. The value of the additional credit in this case which is only a portion of the total grading for a final FUS rating may well be overshadowed by the cost of maintaining an older unit for reasons previously mentioned.

CRFRS has been working on an apparatus replacement plan that clearly outlines apparatus replacement for each unit as illustrated in the previous tables.

3.14 Ancillary Equipment

Equipment needed for field response operations such as vehicle extrication tools, hand tools and blowers are current and appropriate for the needs of CRFRS. The ancillary equipment is designed and maintained to meet the department's current core service, goals and objectives. As the response needs change or grow, additional equipment to match the service must be considered.

3.15 Personal Protective Equipment

CRFRS personnel are supplied with the latest NFPA, NIOSH and CSA approved Personal Protective Equipment (PPE) including turnout or bunker gear, gloves, helmets, boots and any specialized gear for specific rescue and EMS operations. The PPE provided is current, appropriate, and designed to meet the department's goals and objectives.

3.16 Specialized Operations Equipment

Sometimes an effective and efficient response to an incident requires equipment designed for a specific purpose. CRFRS responds with specialized equipment to incidents involving motor vehicles, DG incidents, low angle rescue, confined space, ice rescue and water rescue. The equipment appears to meet the goals and objectives of the department and requires no further action at this this time.

CRFRS has taken advantage of special programs and grants for flood mitigation and wildland interface resources, training, and equipment, including working together with Provincial Agricultural and Forestry on a pilot drone program to assist with wildland urban interface strategies (Firesmart).

3.17 Asset Management

Clearwater County and the CRFRS have asset management programs and processes in place to identify and track assets and replacement plans. The Intermunicipal Regional Fire Rescue Services Agreement outlines conditions and expectations for the fiscal responsibility of both operational and capital assets. It should be noted that the Clearwater County Fleet and Equipment Management Plan stipulates the processes to be followed for procurement and dispersal of capital equipment. Following the 'North West Trade Partnership Agreement', it is expected that the tender process would typically take 8-12 months or more prior to production of replacement apparatus.

As well, the following replacement schedule is to be followed for replacement of all standard fire department equipment: reference to the National Fire Protection Association Standard (NFPA) 1901- Standard for Automotive Fire Apparatus:

Pumper Trucks	20 years from date of production
Tanker Truck chassis	20 years from date of production
Water tank (50-60 barrel)	30 years from date of production
Rescue Truck	20 years from date of production
Jaws of life	20 years from date of production

Clearwater County maintains an asset management program and capital reserve program with CRFRS as part of the life cycle replacement plan.

Current Underwriters Laboratories of Canada (ULC[14]) and NFPA 1901: Standard for Automobile Firefighting Apparatus Standards recommend using apparatus on the front line for up to 15 years, then as a backup for another 4-5 years. Of course, this timeline is dependent on the frequency of use, scheduled maintenance, and budgets. As indicated in Table 12, some emergency vehicles life cycles can be extended due to low usage or serviceable condition. A leading practice is to have a complete condition survey conducted to determine if there is usable life cycle remaining. This condition survey must consider the NPFA and FUS standards along with the maintenance and cost records of the respective vehicle.

Replacement lifecycles for CRFRS vehicles are consistent with lifecycles recommended by the Fire Underwriter's Survey (FUS) body reporting to the Canadian General Insurance (CGI). In addition to maintenance of a current fleet capable of reliably providing service, meeting insurance guidelines favourably impacts municipal insurance ratings.

3.17 Equipment and Apparatus Maintenance

Fleet maintenance is coordinated by the CRFRS Deputy Chief with the Clearwater County public works shop foreman and utilize 3rd party vendors for specialized requirements. Clearwater County conducts equipment and apparatus maintenance for the CRFRS fleet. For CRFRS this also includes the ladders and pumps, and general-purpose vehicles such SUVs, pick-up trucks, and ATV and shared apparatus and vehicles. The Clearwater County Fleet Services completes the bulk of the work and contracts out to local businesses that have specialized service for fire apparatus that requires an Emergency Vehicle Technician (EVT).

3.18 Municipal Comparatives

Comparing the CRFRS to that of similar county fire departments is a good way to identify benchmarks and trends. It must be noted that all communities/ counties have different attributes such as risk factors and community profile. For this reason, the municipal comparative analysis should be used as a base reference that is not intended to be replicated in Clearwater County. These benchmarks include budgets, performance, effectiveness, and efficiencies.

For the purposes of this municipal comparative analysis, we used 2015–2019 information to get common information from each community. Although fire and emergency services ultimately

[14] *Underwriters Laboratories of Canada (ULC) is an independent product safety testing, certification, and inspection organization. www.canada.ul.com*

have the same goal of protecting life and property, each community has its unique features in how to accomplish their goals. Therefore, there are no ideal or identical comparatives for CRFRS.

Our main criteria for collecting information were:

- Population
- Budgets
- Department size
- Type (Full-time, Part-time or Combination)
- Department staffing
- Number of firehalls
- Call volume
- Call types

Table 13: Participating Municipal Comparatives

Community	Province	Population	Land Area (KM^2)
Clearwater County	AB	19,094	18,961
Slave Lake	AB	9,454	10,076
MD of Foothills	AB	21,248	3,643
County of Grande Prairie	AB	28,000	5,700
Red Deer County	AB	16,419	3,031

3.18.1 Department Profile

Department profile, staffing models and levels of service are based on community risk, risk tolerance and the ability for a community to pay for, and sustain desired service levels.

Table 14: Participating Municipal Comparatives Department Profile

Community	Department Type	No. of Firehall
Clearwater County	Composite	5 + HQ
Slave Lake	Composite	5
MD of Foothills	Composite	6
County of Grande Prairie	Composite	9
Red Deer County	Composite	5

Table 15: Participating Municipal Comparatives Department Profile – Organizational Structure

Community	Total Staff	Full Time Staff (Admin. and Operations)	Part Time Staff	POC Volunteer Staff	Fire Staff /KM^2
Clearwater County	92	6	N/A	86	1:206
Slave Lake	109	8	N/A	101	1:92
MD of Foothills	107	11	N/A	96	1:34
County of Grande Prairie	204	24	40	140	1:28
Red Deer County	110	5	N/A	105	1:27

Full-time (FT) Part-time (PT)

3.18.2 Budgets

Department budgets are of specific concern to most communities. In some instances, budgeting for fire and emergency services make up a considerable portion of a community's operating budget. We evaluated the budgets for each community, and it is important to note that each is unique in how each municipality allocates their budgets.

Each community factors in overall community profile and risk factors. CRFRS's cost per capita is the third lowest in the comparative counties however, it cannot stress enough that no two counties are the same in this regard.

Table 16: Participating Municipal Comparatives Budget Ranking

Community	Population	Municipal Operations Budget (2020)	Department Operating Budget	Cost per capita	% of Municipal Budget
Clearwater County	18,888 Collectively 2016 stats Canada	RMH: $26.5M Village: $1.1M County: $54M	$3.06M (County $2.32M)	County: $154.35 Town: $91.62 Village: $63.56	3.3% Collectively
Slave Lake	9,454	Town: $30M MD: $27M	Town:$1.5M MD: $850k	Town: $225.53 MD$:303.25	4.1%
MD of Foothills	21,248	$41.58M	$5.4M	$254.14	12.9%
County of Grande Prairie	28,000	$85.8M	$9.14M	$326.14	10.65%
Red Deer County	16,419	$54.4M	$1.96M	$119.37	3.6%

3.18.3 Response Data

For the purposes of this municipal comparative analysis, we used 2015–2019 information to compare common response data from each community. As previously indicated each municipal fire service collects response data differently. To the extent possible information provided by the various comparative communities was extrapolated into the three following categories as described in Table 17.

Table 17: Examples of Incident Types for Statistical Analysis

INCIDENTS BY TYPE		
EMS Related Calls		
Call Types	Pre-Hospital Care: Alfa, Bravo Charlie Delta Echo	
	Lift Assist	
Fire Related Calls		
Fire Emergency	Alarm/ False Alarm Burning Complaint Structure Fire Minor Fire Smoke	Car Fire Re-check Wildfire – Grass, Brush, Outdoor Oven/Pot on Stove Explosion
MVI (Motor Vehicle Incident, aka. MVC (Motor Vehicle Collision)	Extrication	No Extrication
Rescue	Stalled Elevator Lake/Marine Rescue High Angle	Swift Water Building Collapse Ice
Hazmat/Dangerous Good	Highway Incident Rail Incident	Industrial Incident Resident Incident
Non-Emergency	Carbon Monoxide Gas/Oil Smell/Spill Power/Telephone/Cable Line Down Natural Gas Leak	Aircraft Standby Incident Bomb Threat Hazardous Materials Propane Leak/Smell
Other Response Statistics		
Other	Inspection Burning Pile Inspection Assist Other Agency Public Service	Needle Pick-up Flood Assessment Water Problem (in structure)

Note: *Description and category names may not be common terminology in all jurisdictions.*

There is no standard for categorizing incidents so it must be understood that statistics are only a general reference when comparing these varied county fire departments. In the table below the 'calls per kilometer squared' are only given for the 2019 statistics to keep from cluttering the table.

Table 18: Participating Municipal Comparatives Response Call Volume

Community		Clearwater County	Slave Lake County	Foothills County	Grande Prairie County	Red Deer County
Total Call Volume *(Calls/km²)*	2015	454	320	1095	1430	700
	2016	470	314	1029	1645	841
	2017	482	377	1267	1647	838
	2018	484	375	1272	1888	840
	2019	479 *(.025/km²)*	451 *(.044/km²)*	1163 *(.32/km²)*	1891 *(.33/km²)*	842 *(.28/km2)*
Fire/ Rescue Related Calls *(Calls/km²)*	2015	376	172	299	214	509
	2016	375	155	284	168	612
	2017	362	176	302	246	609
	2018	344	208	308	288	690
	2019	354 *(.018/km²)*	217 *(.022/km²)*	267 *(.07/km²)*	286 *(.05/km²)*	591 *(.19/km2)*
EMS Related Calls *(Calls/km²)*	2015	36	27	337	545	185
	2016	31	34	334	634	224
	2017	113	50	549	766	225
	2018	118	16	561	858	202
	2019	109 *(.005/km²)*	43 *(.004/km²)*	510 *(.13/km²)*	905 *(.16/km²)*	232 *(.01/km2)*
Other Response Statistics	2015	42	121	64	829	9
	2016	64	125	67	722	8
	2017	7	151	68	635	7
	2018	22	151	45	742	27
	2019	16	191	44	700	22

As previously indicated, all communities/ counties have different attributes such as risk factors and community profiles. In addition financial administration, records and data methodology, and management systems all differ in varying degrees. Nonetheless what can be gleaned from this analysis it that Clearwater County utilizes a composite staffing model that is like the comparatives. The average staff ratio per kilometre squared of all comparatives communities is 1.40 fire staff/km^2 whereas Clearwater County is slightly under this ratio at 1.206 fire staff/km^2. The cost per capita indicates that Clearwater County is the lowest amongst the comparative communities. It must be noted that the counties of Foothills and Grande Prairie respond to a significant greater number of medical related calls than the counties of Clearwater and Slave Lake.

SECTION 4
RESPONSE STATISTICS AND PERFORMANCE STANDARDS

4.1 Response and Service Categories

Response and service categories provide a method of capturing the diverse types of emergencies and service type responses requested of the fire service. These response/service categories, if too broad, make it difficult for the Fire Chief to determine trends or evaluate risks. Analyzing the volumes and performance data of each response type will assist in monitoring that their SOC and/or objectives are met. These response/service categories can be further broken down to identify specific call types which would assist in identifying trends and risks. For example, the fire suppression category encompasses all types of fire related responses. If this category is further expanded to identify responses such as kitchen or stove-top fires, chimney fires and minor fires (i.e. dumpster fires), the Fire Chief could develop specific prevention programs that target the recurring types such as cooking safety or promote chimney cleaning and maintenance as part of the public education program.

Capturing accurate time stamps for each response is a necessity to allow for the Fire Chief to analyze the actual performance criteria against required standards, whether those by NFPA or those set by the jurisdiction in their SOC or similar approved document. It is common practice to capture important benchmarks achieved on the fire scene as well as other emergency scenes. CRFRS dispatch services are provided through the Red Deer County Emergency Communications Centre utilizing the Priority Dispatch System, identifying specific protocol determinants for each type of emergency received. CRFRS has access to extensive record of all activities, including emergency and non-emergency requests. Available information includes:

- Type of incident
- Time stamps within the incident
- Number of personnel responding/on-scene
- Time of day
- Day of week
- Cancelled in station or enroute
- Inspections
- Fire investigations

This available data allows CRFRS administration to review their performance against set objectives. CRFRS information was presented in several excel spreadsheets supplied by the Director. Our review of the provided data showed inconsistent incident types year to year, which made it difficult to compare year to year.

Table 19: Summary of Call Types and Frequency by Station (2014-2019)

Response Types	Leslieville Station 10	Condor Station 20	Caroline Station 30	Nordegg Station 50	Rocky Mountain House Station 60
Calls for Service	521	566	549	210	1548
Average Calls per Year	86	94	92	35	259
Structure or Vehicle Fire	4%	21%	16%	8%	3%
MVI	4%	27%	22%	33%	26%
Medical Assistance	21%	19%	31%	30%	18%
Bush/Grass Fire	19%	4%	4%	5%	12%
Alarm Calls	3%	6%	6%	7%	30%
Electrical	-	-	-	-	3%
Ice/Water	-	-	-	8%	2%
Other Types	52%	34%	21%	25%	6%

Observation #17: *The types of incidents that were captured for each year were not consistent and made it difficult to compare year to year. There are unique demands for CRFRS services in each area served by their respective fire halls that would assist in identifying specific hazards in each region and the need for specific types of equipment and training based on those hazards. Fire prevention activities can be identified where numbers of specific call types are high or on the rise.*

Recommendation #17: Develop consistent incident tracking categories

(Suggested completion: 0-12 months)

That the CRFRS develop consistent incident types that can be used each year for comparative purposes. Sub-categories can then be developed as unique incident types occur.

4.2 Industry Standards

The most widely accepted standards for the fire service are developed by the NFPA. Several decades of research have resulted in the NFPA establishing industry benchmarks for operation and firefighter safety. The use of industry standards, such as those offered by the NFPA, does not limit a local government's flexibility to develop levels of service based upon local conditions and economic realities. Rather, the use of these standards as a guide, along with Alberta Building Code Limiting Distance and Fire Department Response (aka HIRF) requirements, Safety Codes Legislation and the Alberta Firefighter Code of Practice, can allow CRFRS to establish levels of service that optimize service delivery within its fire service budget requisitions while maintaining firefighter and public safety.

NFPA has done considerable research in developing the recommended standards and ensuring they reflect the primary value of life-safety in emergency response. The NFPA's Standard 1720: Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments, provide clear performance standards for departments to ensure effective measurement and reporting of activities.

Alternatively, most Canadian municipalities choose to develop a performance standard based on their specific risk factors, organizational capacity, and economic conditions. This type of performance standard is acceptable as there is no legislated or regulated obligation for a community to have a fire service in Alberta. In this case, the responsibility to understand community expectations and to determine an appropriate level of investment in fire service rests with Clearwater County Mayors, Reeves, and Councils.

The NFPA sets standards for intervention time, and although these are not requirements, they are widely accepted as industry best practices. They therefore provide a good standard by which departments can measure their performance and set targets. NFPA's Standard 1720 provide a basis to evaluate the CRFRS's service effectiveness. Table 20 contains an excerpt from NFPA Standard 1720 that identifies the recommended minimum staff to respond (ERF), and response time based on demand zone (fire protection area) and demographics.

To comply with NFPA 1720, this table may be used by the authority having jurisdiction (AHJ) to determine staffing and response time objectives for structural firefighting, based on a low-hazard occupancy such as a 2000 ft^2 (186 m^2), two-story, single-family home without basement and exposures and the percentage accomplishment of those objectives for reporting purposes as required. It is important to note that the application of NFPA 1720 includes medical first response and other specialized operations (response services) provided by volunteer/POC fire departments. The table below has been extrapolated to include "all calls for service".

Table 20: Staffing and Response Time

Demand Zone	Demographics	Minimum Staff to Respond	Response Time (minutes)	Meets Objective (%)
Urban Area	>1000 people/mi^2	15	9	90
Suburban Area	500-1000 people/mi^2	10	10	80
Rural Area	<500 people/mi^2	6	14	80
Remote Area	Travel distance >8 mi	4	Directly dependent on travel distance	
Special Risks	Determined by AHJ	Determined by AHJ based on risk	AHJ	

- *A jurisdiction can have more than one demand zone*
- *Minimum staffing includes members responding from the AHJs department and automatic aid*
- *Response time begins upon completion of the dispatch notification and ends at the time interval shown in the table*

Table 20 also includes a percentile objective for volunteer services to meet the recommended standards. In the case of urban or suburban areas, the objective would be to respond to all calls for service in 90% or 80% of the time within 9 and 10 minutes, respectively. Based upon NFPA 1720 in Table 20, a large portion of Clearwater County would be categorized as a remote area with no defined response/travel time, and a minimum of 4 firefighters in all responses. The Town of Rocky Mountain House would be considered an urban area with a 9-minute response time with a minimum of 15 firefighters, 90% of the time. The Leslieville, Condor and Nordegg areas would be considered rural areas with a 14-minute response time with a minimum of six firefighters 80% of the time. Caroline would be considered suburban are with a 10-minute response time with 10 firefighters 80% of the time.

4.2.1 Intervention Time

Intervention time is defined as the time between the fire department receiving notification of an emergency and commencing assistance at the scene of the emergency. Increased intervention time can have two important impacts on a landowner:

- Decreased survivability for trapped victims
- Increased loss in the event of an emergency
- Building design restrictions
- Higher property insurance premiums

Table 21: Intervention Time Defined

<table>
<tr><td colspan="6">Intervention Time Urban:
Population >1000 people/mi²</td></tr>
<tr><td colspan="2">←</td><td colspan="3">Time Values</td><td>→</td></tr>
<tr><td colspan="2">Notification</td><td colspan="4">Intervention Time</td></tr>
<tr><td rowspan="2">Discovery</td><td rowspan="2">Emergency Call</td><td colspan="3">Enroute Time</td><td rowspan="2">Set-up</td></tr>
<tr><td>Dispatch Time
(Call Handling)</td><td>Assembly or
Chute Time</td><td>Total Response
(Including Travel)</td></tr>
<tr><td colspan="2" rowspan="3">Time Unknown</td><td rowspan="3">Included</td><td>Included</td><td rowspan="3">540 sec @ 90%</td><td rowspan="3">120 sec</td></tr>
<tr><td>Min. Staffing</td></tr>
<tr><td>15</td></tr>
<tr><td colspan="2">Time indirectly manageable</td><td colspan="4">Time directly manageable</td></tr>
<tr><td colspan="2">←</td><td colspan="3">Reflex time</td><td>→</td></tr>
</table>

Response time begins upon completion of the dispatch notification and ends at the time interval shown in the table.

Upon assembling the necessary resources at the emergency scene, the fire department shall have the capability to safely commence an initial attack within 2 minutes 90 percent of the time.

Discovery: This is the time between the start of the emergency and when a person or an engineered system has detected the incident.

Emergency Call: This is the period between discovery and the actual notification of emergency services. The initial call is taken at the City of Red Deer (ECC).

Dispatch Time/Notification: This is the time required to extract the necessary information from the caller to allow the proper response to be initiated. The dispatcher identifies the correct fire location and initiates the dispatch by paging the CRFRS.

Assembly (Chute) and Travel Time: This is the time from when Dispatch notifies the firefighters by pager until the first vehicle leaves the station and arrives on scene. NFPA 1720 establishes that response time begins upon completion of the dispatch notification and ends at the time interval shown in Table 21 and when the assigned vehicle arrives on scene. As an example in the Town of Rocky Mountain House, their population density would be categorized as urban; therefore, the response system capacity would be a minimum of 15 firefighters arriving within nine minutes in 90 percent of all calls for service. Once a vehicle leaves the station, it must negotiate the best route between that point and the location of the emergency. Factors to consider for travel time are driver skill, weather, traffic, topography, road conditions and vehicle capabilities.

Setup Time: This is the time it takes (on site) to evaluate the necessary actions, position the required resources, and commence the intervention. In the case of a fire, completing size-up, assigning the necessary tasks, and deploying resources can provide delays on scene. A well-trained crew can minimize these delays while providing a safe, successful response. The recommended standard for this increment is two minutes. It is important to note that setup time is not a time increment for determining the ABC's limiting distance and fire department response time (HIRF) and has not been considered in the response statistics analysis or theoretical mapping criteria.

There are two variable portions of the total intervention time for POC service models. The first being the assembly or chute time. The availability of firefighters to respond is variable depending upon the time of day, month, year etc. The second variable is the response travel time, which is primarily a function of the distance from the station to the incident, but is also influenced by several other factors, including but not limited to:

- The size of the demand zone
- The layout and footprint of the community (route widths and alternatives)
- Impediments, such as weather or time of day (traffic jam)
- Transportation system (including roadways, bridges, underpasses, overpasses, railway, major highways, construction road surface, detours, etc.)

Response and travel time identified in Table 21, Intervention Time Defined have been further defined as enroute and total response times. These increments are of importance for this analysis and are defined as:

- ENROUTE TIME: The time from the fire department notification (ECC call answering) to the arrival of minimum responders to the Fire Station
- TOTAL RESPONSE TIME: The time from completion of the fire department notification that includes enroute and travel time

It is important to note that the response time statistics are averages from the data provided.

4.2.2 Effective Response Force (ERF)

In addition to the call volume statistics for CRFRS, an analysis of the ERF was conducted. The initial response to an incident is currently averaging 4-8 firefighters arriving in with large variations depending on the area of the County involved. CRFRS has set the staffing of the initial response at minimum of four firefighters. This was done to achieve a properly staffed company of a minimum of four firefighters (including a qualified Officer and qualified Operator). However, consideration should be taken for each type of call for optimal deployment of staff and apparatus utilizing a critical task analysis.

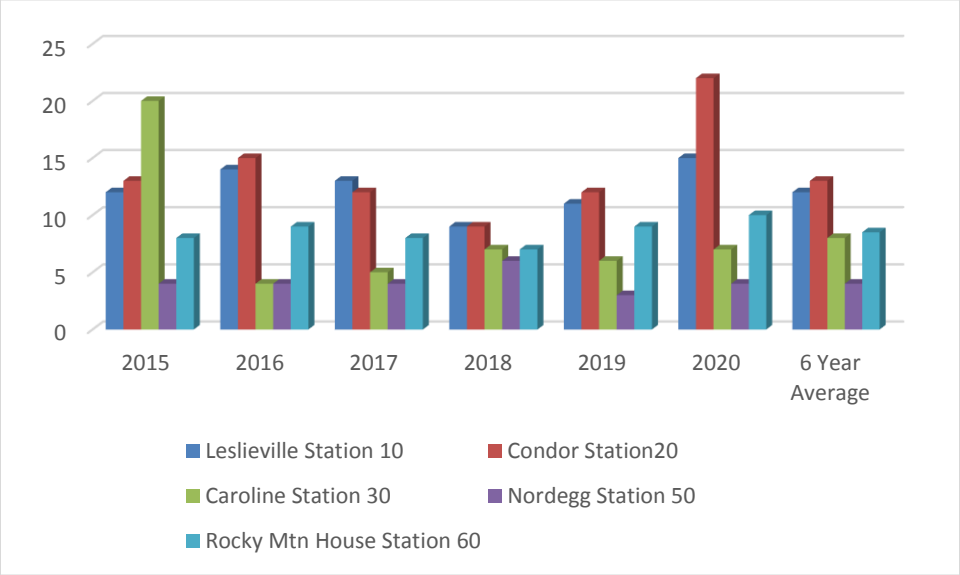
As previously indicated, NFPA 1720 recommends that volunteer/POC fire services strive to have an ERF of trained firefighters arriving on scene within the recommended time in the appropriate percentage of calls for service.

Based on the 2019 and 2020 data for structure, vehicle, and wildland responses from each of the fire stations based on response area was:

Table 22: Average Number of Firefighters who Respond on Receipt of a Call

Demand Zone	2015	2016	2017	2018	2019	2020	6 Year Average
Leslieville Station 10	4	4	6	8	8	7	6
Condor Station 20	6	5	5	8	7	9	7
Caroline Station 30	5	5	5	7	6	7	6
Nordegg Station 50	4	4	4	3	4	4	4
Rocky Mountain House Station 60	8	8	8	7	9	9	8

Figure 9: Number of Firefighters that Respond to the Station by Station by Year



The following table indicates the average number of firefighters and time that arrival on scene occurs. The difference between this data and that of the number of firefighters that respond to the fire station may be a result of the timeliness of each firefighter's arrival to the fire station and the required number of firefighters actually required for each type of incident.

Table 23: Response Time and Firefighters on-scene - NFPA vs Actual by Station (2019-2020)

	Response Time (min.)		Firefighter On-scene	
	NFPA	Actual	NFPA	Actual
Rocky Mountain House Urban Area	9:00	10:47	15	8
Rocky Mountain House Rural Area	N/A	24:27	6	9
Caroline Suburban Area	10:00	13:02	10	6
Caroline Rural Area	14:00	25:37	6	7
Condor Rural Area	14:00	18:09	6	7
Leslieville Rural Area	14:00	20:21	6	8
Nordegg Rural Area	14:00	49:13	6	3

Figure 10: Average Dispatch Times by Station (2015-2020)

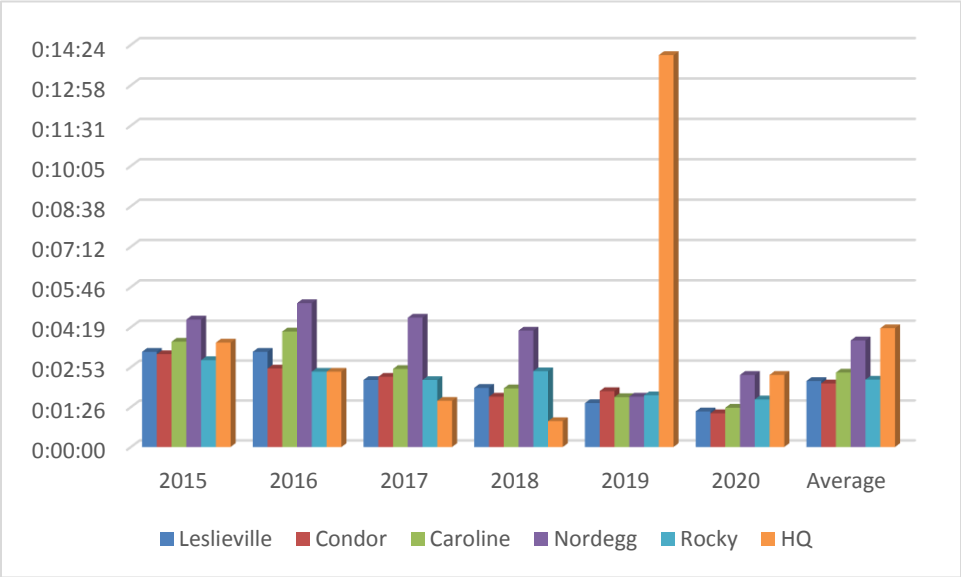


Figure 11: Average Chute Times by Station (2015-2020)

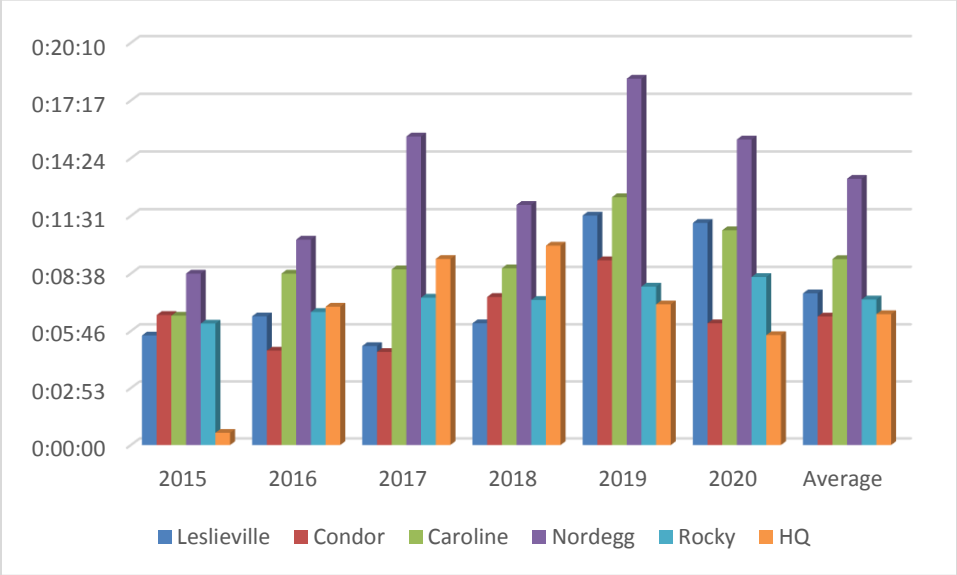


Figure 12: Average Travel Times by Station (2015 – 2020)

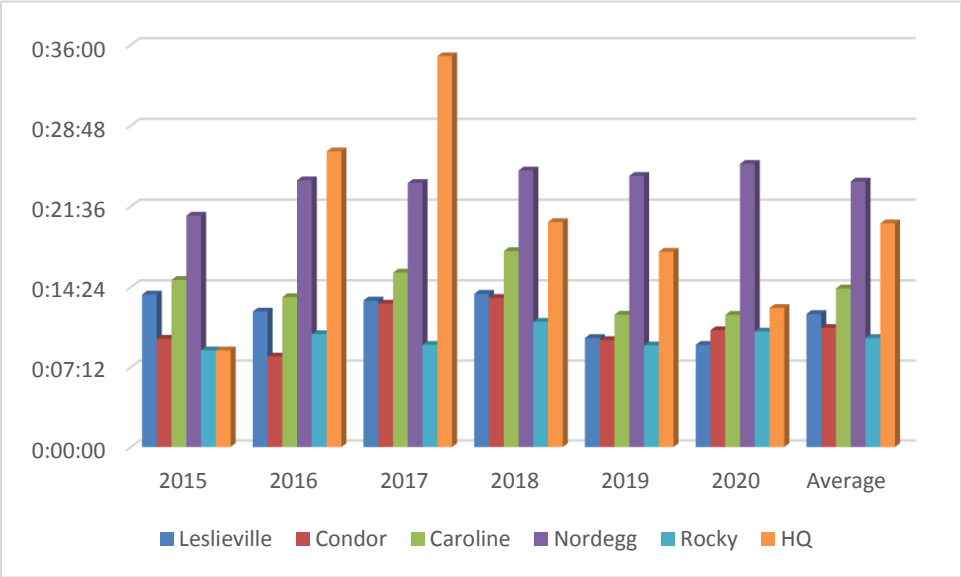


Figure 13: First Apparatus On-scene Times by Station (2015-2020)

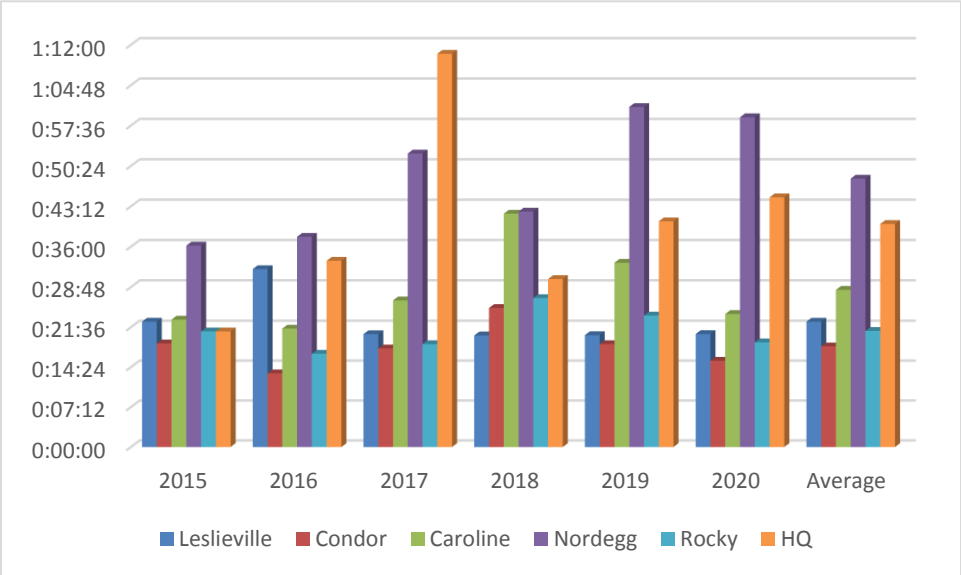


Figure 14: Leslieville Station 10 – Total Times by Year

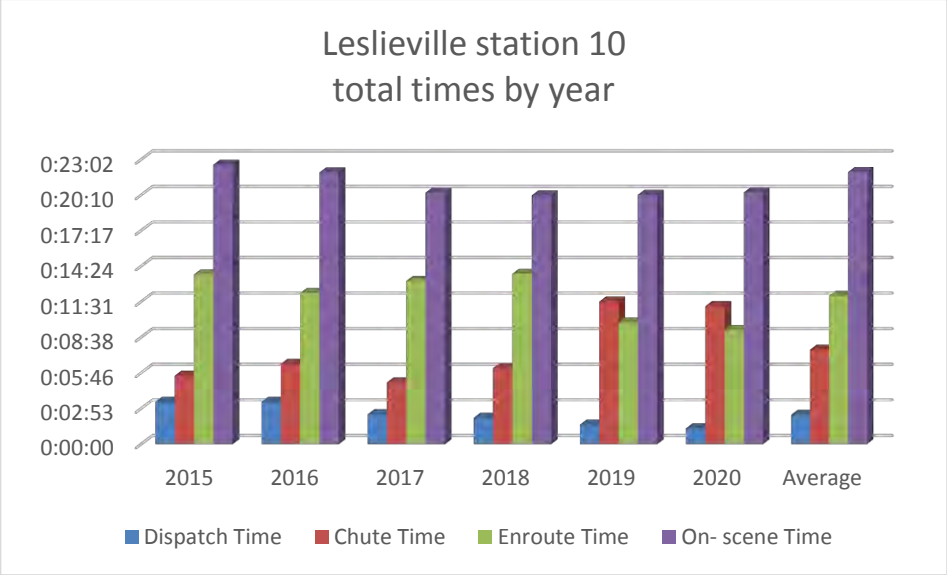


Figure 15: Condor Station 20 – Total Times by Year

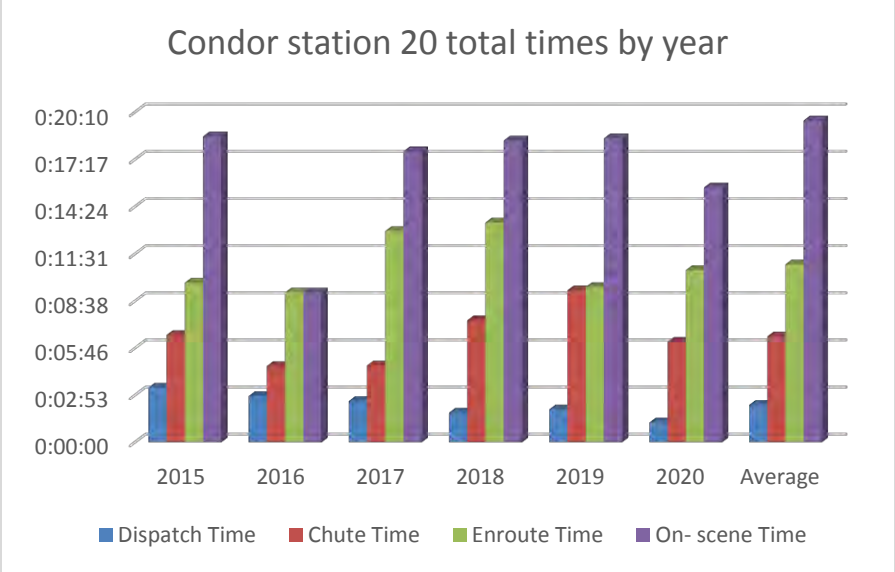


Figure 16: Caroline Station 30 – Total Times by Year

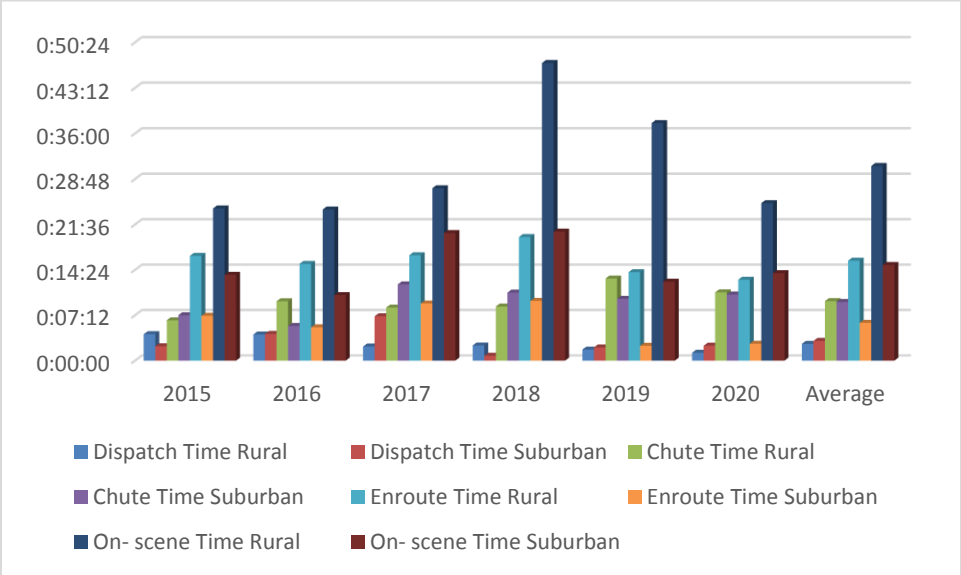


Figure 17: Nordegg Station 50 – Total Times by Year

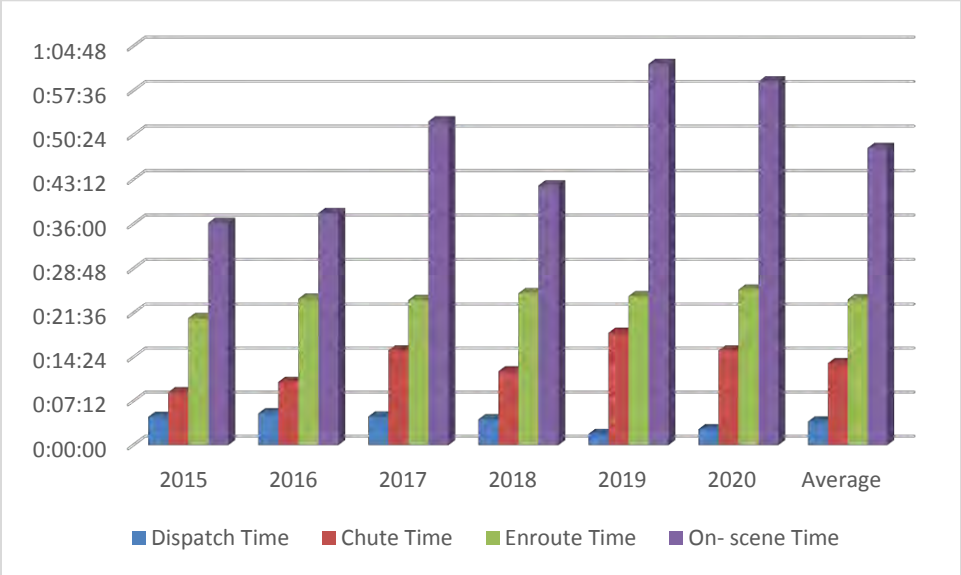


Figure 18: Rocky Mountain House Station 60 – Total Times by Year

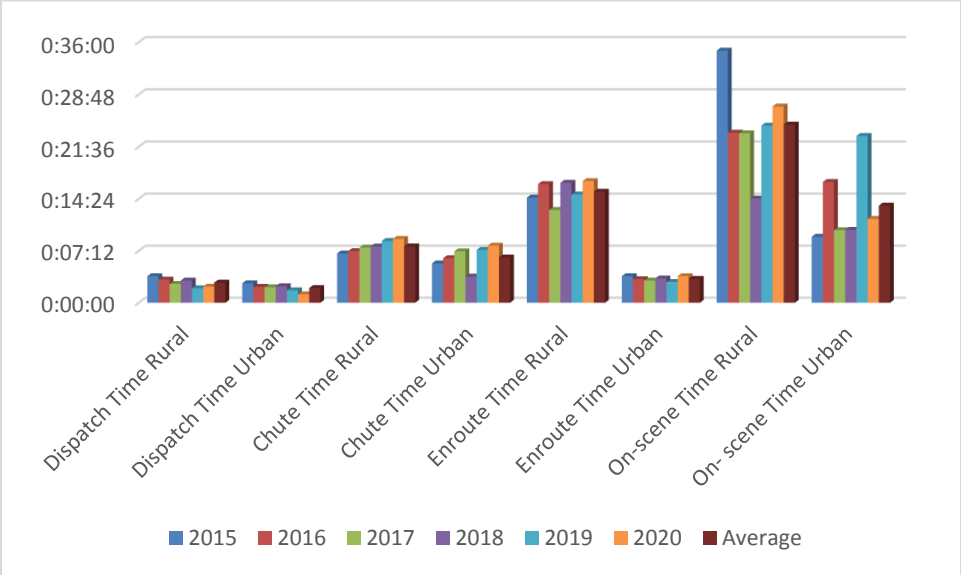
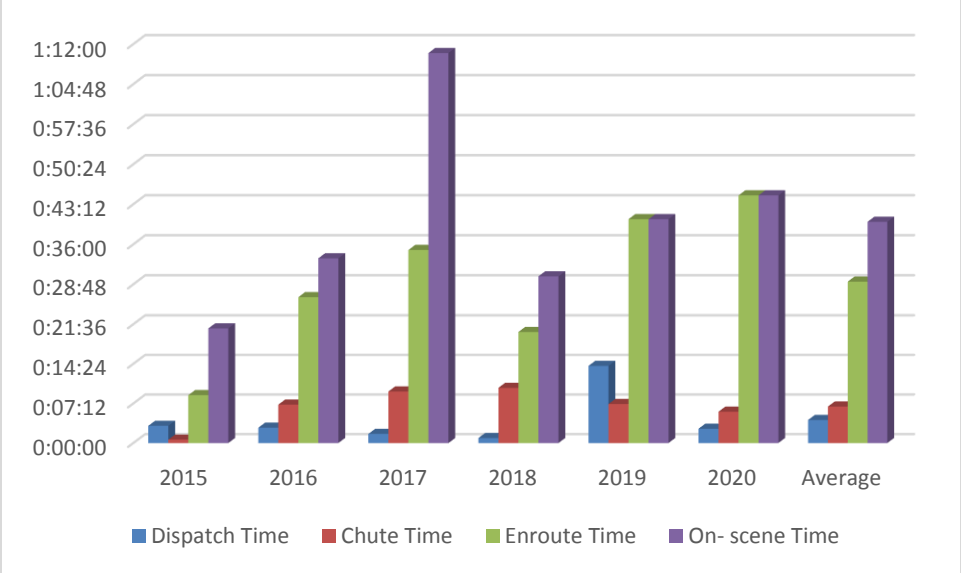


Figure 19: Headquarters Response Time – Total Times by Year



While the response times for CRFRS does not meet the recommended NFPA 1720 ERF, there are factors that are within the control of the fire service to improve upon. The actual travel distance is for the most part a static assessment based on the km of travel based on reasonable apparatus speeds and road conditions. There may be opportunity to strive for improvement in actual dispatch process times and chute times. Many services utilize pre-alerts through their dispatch provider to shorten the dispatch time. Many times chute times can be improved by simply focusing on the goals and shortfalls for a safe response to the station and readiness out of the station. By improving either or both time frames, the response area that can be reached in the recommended times is expanded.

Observation #18: *The Red Deer ECC average call processing time is averaging 2 minutes and 38 seconds (158 seconds). The Alberta Fire Commissioner's office has deemed call processing time as part of the fire department's receipt of notification when applying the ABC Limiting Distance and Fire Department's 10-minute response regulation. Leading industry practices for Emergency Services Communication Systems NFPA 1221 indicate an optimum call processing time of 79 seconds (call-answered, verification and processing). Upon review of the CRFRS response statistics it was determined that there has been no utilization of pre-alerts as part of the fire department notification protocols.*

Recommendation #18: Enhance fire department receipt of notification protocols

(Suggested completion: 6-12 months)

It is recommended the Fire Chief working closely with the Red Deer County ECC to develop enhanced receipt of notification protocols that include consistent use of pre-alerts and other procedures that reduces the current 158 second average fire department notification process.

4.2.3 Occupational Health and Safety Guide for Firefighting

On March 2019 Occupational Health and Safety (OHS) of Alberta released a new bulletin document that replaced the former Code of Practice for Firefighters 2007. This new bulletin describes the minimum standards for the fire service to comply with the OHS Act and regulations that pertain to fire and rescue operations.

This bulletin further enhances understanding of existing regulation under OHS for the safety and well-being of fire fighters. The fire services have been identified to further develop standards policies that include reference to the National Fire Protection Association (NFPA) and industry best practice. All work sites including those that are response to emergencies are to be assessed and where reasonably practical hazards shall be controlled through administrative controls, engineering, or personal protective equipment.

Fire services are to clearly identify through policy the standard firefighting functions based on the services offered. This involves identifying service levels offered by the municipalities or private fire services. Including required personnel required (minimum number) to safely perform each function for services offered.

Further details of this bulletin outline the required specific training for each task, recording and skills maintenance tracking of each one of the skill sets required to perform duties safely. Comprehensive legislated requirements are further outlined in this document to provide fire services with expectations of safe work practices for all firefighters including their physical and mental health.

Observation #19: *While there remains in effect the Intermunicipal Fire Service Agreement CRFRS has not established a Standards of Cover policy that provides a comprehensive series of benchmarks that define an affordable, acceptable, and appropriate level of service for each of the unique areas within Clearwater County.*

The benefits of completing an SOC will ensure that CRFRS has a clear understanding of the scope of overall risk for the community while enabling them to identify the resources and response capabilities necessary to adequately address those risks. The SOC will further ensure CRFRS has a safe and effective response force for all emergencies including fire suppression, emergency medical services and specialized response situations.

Recommendation #19: Establish service level benchmarks as part of the standard of cover as detailed in recommendation 2

(Suggested completion: 0-24 months)

The SOC is used to establish performance benchmarks for existing levels of service, providing opportunities for continuous improvement at the same time. This would also provide a well-articulated description of services to be provided to the community with the full understanding and endorsement of elected officials.

The SOC provides governance and accountability measures where the policy makers (Council) have approved the core services, standards and service levels, and the resources (funding) required to delivery these services. Administratively the Fire Chief can provide Council with service level performance assessments as part of an accountability process. The SOC greatly enhances the roles and clarity between the political, administrative, and operational levels.

Observation #20: *CRFRS has SOPs and SOGs for most of their operations. Maintaining current SOGs/SOPs is a labour-intensive undertaking for most departments. Discussion with the CRFRS Administration confirms the struggle with keeping these essential polies and guidelines current.*

Recommendation #20: Establish an efficient process to review and updated SOGs and SOPs

(Suggested completion: 6-18 months)

It is recommended the Fire Chief establishes a review updating procedure that maintains SOPs/SOGs up to date and includes an accountability process to ensure all staff review on a recurring basis to ensure understanding and compliance. This is considered an essential requirement to comply with the current OHS Guide for Firefighting.

4.2.4 Alberta Building Code Limiting Distance and Fire Department Response (HIRF) Requirements

As part of its commitment to addressing High Intensity Residential Fires (HIRF) in Alberta, the Government of Alberta recently amended its building and fire codes to:

- Make homes safer from the spread of fire
- Provide more time for occupants to escape
- Provide appropriate time for firefighters to respond when there is a fire
- High-intensity residential fires involve rapid heat release and fire spread beyond the point of origin that usually involve adjacent buildings (defined by the HIRF Working Group I). Typically, these fires include early exposure to large amounts of combustible materials. HIRFs can occur in any of the following groupings:
- Occupied residential buildings
- Unoccupied residential buildings (under construction)
- A mix of occupied and under-construction residential buildings

The intent behind the requirement is that when fire suppression staff cannot respond to a fire in less than a ten-minute total response time, buildings must be located farther away from the property line or provided with additional fire protection, such as non-combustible siding, no side-yard windows and sprinkler systems. Additional fire protection measures slow the spread of fire by either containing it or suppressing it and giving the fire department additional time to arrive before the fire spreads out of control or becomes a high intensity residential fire.

The Alberta Building Code specifies a '10-minute' total response time must be achieved for 90 percent of the incidents. The definition of 'total' response time is the time from when a fire department (City of Red Deer ECC) receives the notification of an emergency to the time when a fire department vehicle is capable of beginning fire suppression activities (typically a pumper truck with hoses and a crew) arrives at the scene of incident.

Additionally, where a fire department is unable to respond to a fire within 10 minutes more than 90% of the time, buildings must have greater protection from exposure fires. This can be achieved by two approaches. One approach is to increase the setbacks for new construction along adjacent property lines. Another approach is to reduce the likelihood of fire extension by improving the rated fire resistive design for exposed walls and unprotected openings, as well as the installation of residential sprinklers. This will have a direct impact on Clearwater County Municipal Development Plan and Area Structure Plans should the development projections contained in these plans be attained.

As previously recommended, the Fire Chief working with the City of Red Deer ECC needs to reduce the call processing time as much as possible to aid in extending the area that can be reached within 10 minutes. As well, the CRFRS Administration work closely with their POC's to improve chute times where safety and effectiveness are not compromised. The theoretical

mapping included within this Plan will show the area of coverage within town that can be reached within the prescribed 10 minutes of the ABC regulation (or HIRF).

4.3 Response Statistics

Emergency response statistics provide an extremely valuable source of information for several purposes. A careful and ongoing assessment of captured response data will aid the Administration in identifying:

- Critical response effectiveness
- Community trends
- Assessing current community risks
- Evaluating the effectiveness and compliance with National and Provincial Codes
- Evaluating the effectiveness and compliance with local bylaws
- Opportunities for preventative programs
- Identify possible efficiencies and deficiencies
- Recommendation for service level standards
- Future resource needs (Operational and Capital)
- Public education

Historical event call data for the period of 2014-2020 was analyzed and identified several basic call types for CRFRS:

- Fires (all categories)
- Fire alarm activations
- Emergency medical assistance (Mutual Aid)
- Motor vehicle incidents (MVI)
- Rescues
- Hazardous materials (or dangerous goods)
- Miscellaneous, i.e. electrical, standbys, smoke odors, police assist, etc.

These categories become the basis for assessing the levels of service expected within each area within Clearwater County. Analysis of the types and frequencies of responses from each of CRFRS fire stations indicate unique hazards associated within each area. By identifying current community risks and emergency response resource capabilities plans can be developed to effectively control and mitigate damage to life and property for each type of event. As well hazard prevention programs can be developed for public safety issues that are prevalent or unique to the region. To obtain an appropriate level of service standard, all stakeholders must understand the risk and be open to recognizing the need for a safe and effective response.

Each type of event requires an identified amount of properly trained and equipped staff to safely and effectively complete necessary tasks, either consecutively or cumulatively in a timely manner. For this reason, the levels of service link directly to the resource model (facilities, equipment, and staffing) availability.

To make informed recommendations on what level of service CRFRS can perform safely and effectively, an evaluation of recent and current response data including event types, response times, and staffing availability of typical daily demands for service was completed.

The importance of capturing accurate and complete data on emergency and other service-related events cannot be overstated. With regular analysis of this data, the Administration can be proactive to the needs of their community.

4.3.1 Historical Response Data

CRFRS's emergency call volume and incident type for each of their fire stations has remained relatively consistent over the last 6 years.

Table 24: CRFRS Incident Types (2014-2020)

Leslieville Station 10							
Response Types	2014	2015	2016	2017	2018	2019	2020
Alarm - no fire	1	0	0	0	0	0	0
Electrical	0	0	0	0	0	0	0
Brush/grass (no $ loss)	8	35	24	27	3	2	0
Explosion	1	0	1	0	0	0	0
False alarms	5	0	10	0	0	0	0
Incident situation unclassified	0	1	1	1	0	0	0
Motor vehicle incident	43	25	22	14	12	4	6
No alarm fire	1	0	0	0	0	0	0
Public hazard	1	1	3	0	0	0	0
Public service: medical 1st response	29	9	5	8	6	12	1
Public service: medical co response	2	5	6	11	1	2	0
Gas leak	0	0	0	0	0	0	0
Rescue	0	1	1	0	0	0	0
Carbon monoxide	0	0	0	0	0	0	0
Public service misc.	0	0	0	0	0	0	0
Home accident	0	0	0	0	0	0	0
Resuscitation call	4	3	2	6	0	0	0
Ice/water/other	0	0	0	0	0	0	0
Rupture	1	1	2	0	0	0	0
Structural collapse	1	0	0	0	0	0	0
Structure/vehicle fire	37	15	28	21	13	21	4
Wildland urban interface	0	0	0	0	4	16	7
Industrial emergency	0	0	0	0	0	1	0
Elevator rescue	0	0	0	0	0	0	0
Aircraft	0	0	0	0	0	0	0
Citizen assist	0	0	0	0	1	0	0
Total number of calls	134	96	105	88	40	58	18

Condor Station 20							
Response Types	2014	2015	2016	2017	2018	2019	2020
Alarm - no fire	0	0	15	5	10	6	0
Electrical	1	1	4	1	0	2	1
Brush/grass (no $ loss)	7	26	33	33	3	4	0
Explosion	0	0	1	0	0	0	0
False alarms	0	0	0	0	0	0	0
Incident situation unclassified	3	5	7	0	0	0	0
Motor vehicle incident	35	29	28	26	12	20	10
No alarm fire	0	0	0	0	0	0	0
Public hazard	0	0	0	0	0	0	0
Public service: medical 1st response	22	14	7	4	6	8	1
Public service: medical co response	4	7	7	9	1	3	1
Gas leak	0	0	0	0	0	0	0
Rescue	0	1	2	0	0	0	0
Carbon monoxide	0	0	0	0	0	0	0
Public service misc.	0	0	0	0	0	0	0
Home accident	0	0	0	0	0	0	0
Resuscitation call	1	2	1	4	0	0	0
Ice/water/other	0	0	0	0	0	0	0
Rupture	0	1	2	0	0	0	0
Structural collapse	1	1	0	0	0	0	0
Structure/vehicle fire	26	17	32	17	13	13	8
Wildland urban interface	0	0	0	0	4	17	7
Industrial emergency	0	0	0	0	0	0	0
Elevator rescue	0	0	0	0	0	0	0
Aircraft	0	0	0	0	0	0	0
Citizen assist	0	0	0	0	1	1	0
Total number of calls	100	104	139	99	50	74	28

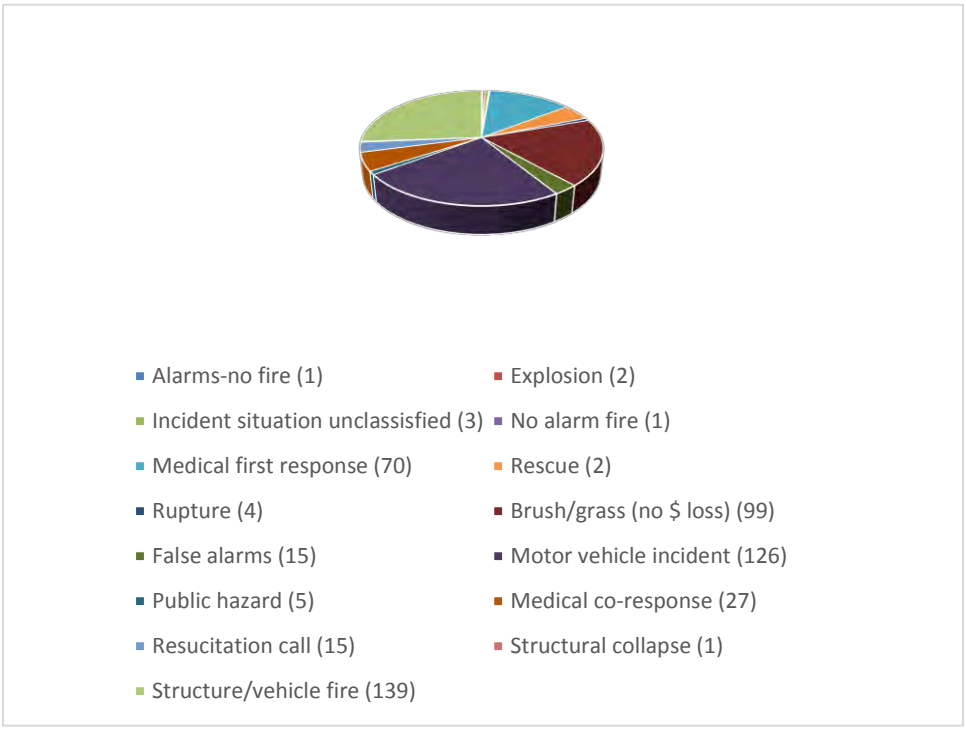
Caroline Station 30							
Response Types	2014	2015	2016	2017	2018	2019	2020
Alarm - no fire	3	1	7	6	10	6	7
Electrical	4	0	6	4	1	2	0
Brush/grass (no $ loss)	3	17	20	20	4	4	0
Explosion	0	0	0	0	0	0	0
False alarms	1	3	0	1	0	0	0
Incident situation unclassified	0	0	0	2	0	0	0
Motor vehicle incident	21	21	25	25	16	15	12
No alarm fire	0	0	0	0	0	0	0
Public hazard	0	0	0	0	0	0	0
Public service: medical 1st response	17	14	19	11	15	15	8
Public service: medical co response	25	3	4	11	14	11	7
Gas leak	1	0	2	1	0	0	0
Rescue	0	0	0	0	0	0	0
Carbon monoxide	0	0	0	3	0	0	0
Public service misc.	0	0	0	2	0	1	0
Home accident	0	0	1	0	0	0	0
Resuscitation call	3	5	0	1	0	0	0
Ice/water/other	0	0	1	1	1	2	0
Rupture	0	0	2	0	0	0	0
Structural collapse	0	0	0	0	0	0	0
Structure/vehicle fire	13	11	20	12	13	18	2
Wildland urban interface	0	0	0	0	7	15	1
Industrial emergency	0	0	0	0	0	0	0
Elevator rescue	0	0	0	0	0	0	0
Aircraft	0	0	0	0	0	0	0
Citizen assist	0	0	0	0	5	1	2
Total number of calls	91	75	107	100	86	90	39

Nordegg Station 50							
Response Types	2014	2015	2016	2017	2018	2019	2020
Alarm - no fire	1	5	0	2	1	5	0
Electrical	1	1	1	1	1	0	0
Brush/grass (no $ loss)	0	0	0	5	4	2	0
Explosion	0	0	0	0	0	0	0
False alarms	0	0	0	0	0	0	0
Incident situation unclassified	0	0	0	0	0	0	0
Motor vehicle incident	9	14	8	14	9	15	6
No alarm fire	0	1	0	0	0	0	0
Public hazard	0	0	0	0	0	0	0
Public service: medical 1st response	8	1	0	3	3	3	2
Public service: medical co response	7	8	5	8	7	9	2
Gas leak	0	1	0	0	0	0	0
Rescue	0	0	0	0	0	0	0
Carbon monoxide	0	0	0	0	0	0	0
Public service misc.	1	0	1	1	0	0	2
Home accident	0	0	0	0	0	0	0
Resuscitation call	0	0	0	0	0	0	0
Ice/water/other	1	4	3	4	5	0	3
Rupture	0	0	0	0	0	0	0
Structural collapse	0	0	0	0	0	0	0
Structure/vehicle fire	1	5	7	0	2	2	2
Wildland urban interface	0	0	0	0	1	3	2
Industrial emergency	0	0	0	0	0	1	0
Elevator rescue	0	0	0	0	0	0	0
Aircraft	0	0	0	0	0	0	0
Citizen assist	0	0	0	0	3	2	0
Total number of calls	29	40	25	38	36	42	19

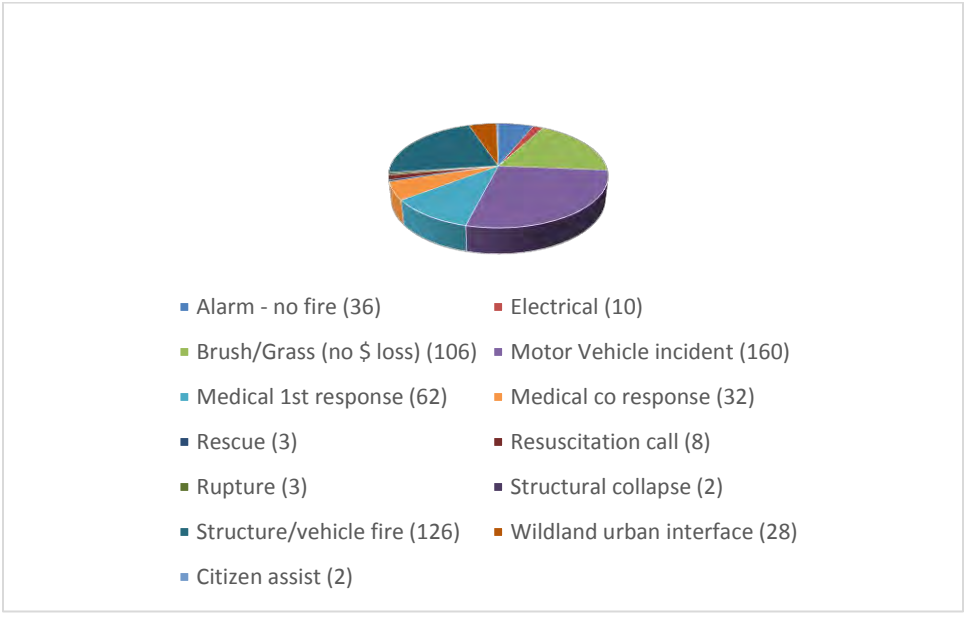
Rocky Mountain House Station 60							
Response Types	2014	2015	2016	2017	2018	2019	2020
Alarm - no fire	60	80	78	63	89	91	42
Electrical	7	5	11	21	0	0	4
Brush/grass (no $ loss)	19	51	53	46	11	8	1
Explosion	1	0	0	0	0	0	0
False alarms	0	0	0	5	0	0	1
Incident situation unclassified	1	3	1	0	0	0	0
Motor vehicle incident	75	76	55	74	53	62	33
No alarm fire	1	0	0	0	0	0	0
Public hazard	0	0	0	0	0	0	0
Public service: medical 1st response	6	3	2	13	17	14	11
Public service: medical co-response	28	28	49	41	40	37	26
Gas leak	12	17	13	7	0	0	0
Rescue	0	0	0	0	0	0	0
Carbon monoxide	0	0	0	0	0	0	0
Public service misc.	1	3	1	0	0	0	0
Home accident	0	0	0	0	0	0	0
Resuscitation call	3	0	1	0	0	0	0
Ice/water/other	5	11	6	0	0	0	7
Rupture	2	1	1	0	0	0	0
Structural collapse	1	1	0	0	0	0	0
Structure/vehicle fire	46	0	0	0	0	0	15
Wildland urban interface	0	0	0	0	15	0	8
Industrial emergency	1	0	0	0	0	0	0
Elevator rescue	0	0	0	1	2	0	2
Aircraft	0	0	0	0	1	2	0
Citizen assist	0	1	0	0	10	5	3
Total number of calls	269	280	271	271	238	219	153

The following charts provide a more general indication of call type incidents requested of individual fire stations within CRFRS response area. While these charts focus on the number of incident types, they do not speak to the level of complexity of time and resources that are required to manage each type of incident safely and effectively.

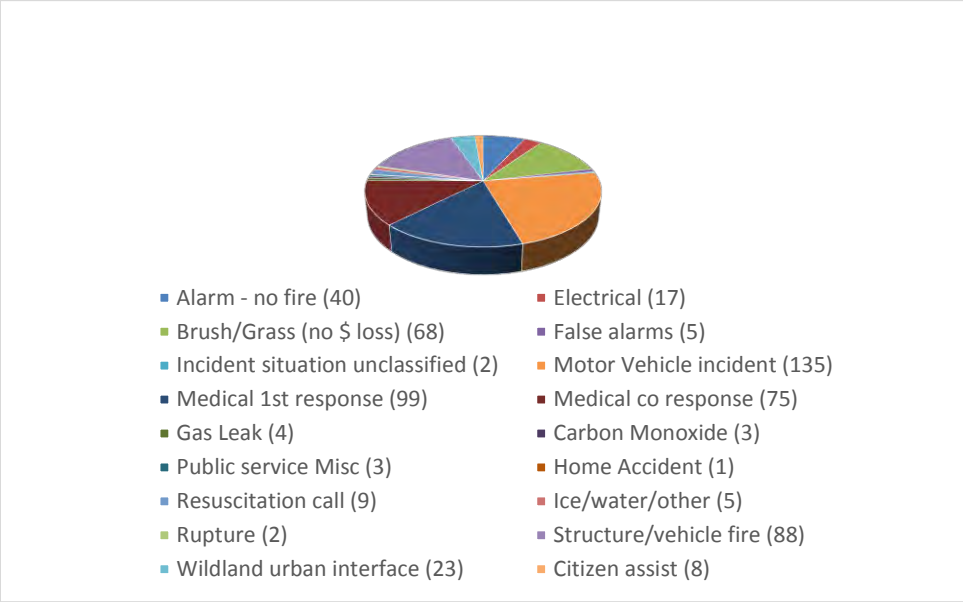
Pie Chart 2: Leslieville Fire Station 10 Call Types (2014-2020)



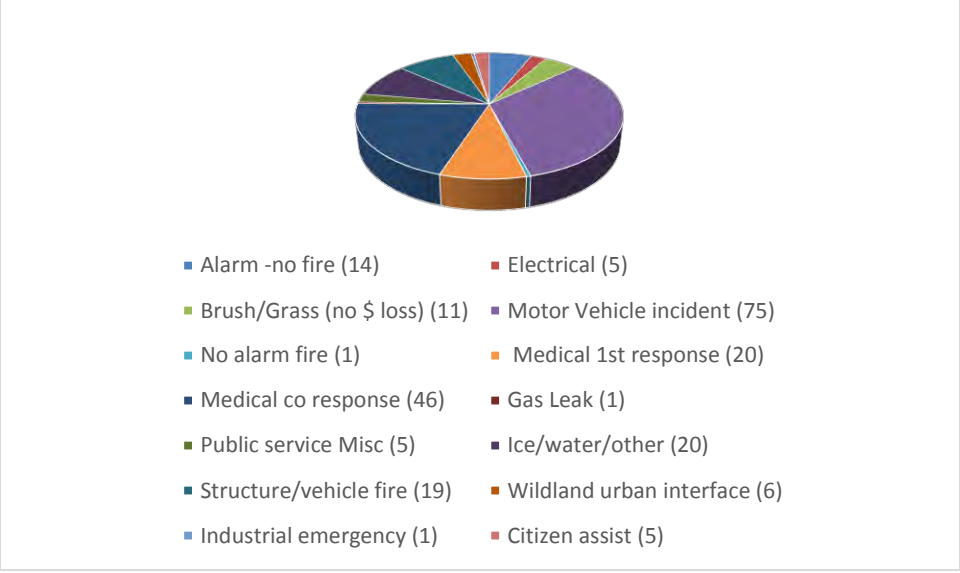
Pie Chart 3: Condor Fire Station 20 Call Types (2014-2020)



Pie Chart 4: Caroline Fire Station 30 Call Types (2014-2020)



Pie Chart 5: Nordegg Fire Station 50 Call Types (2014-2020)



Pie Chart 6: Rocky Mountain House Fire Station 60 Call Types (2014-2020)

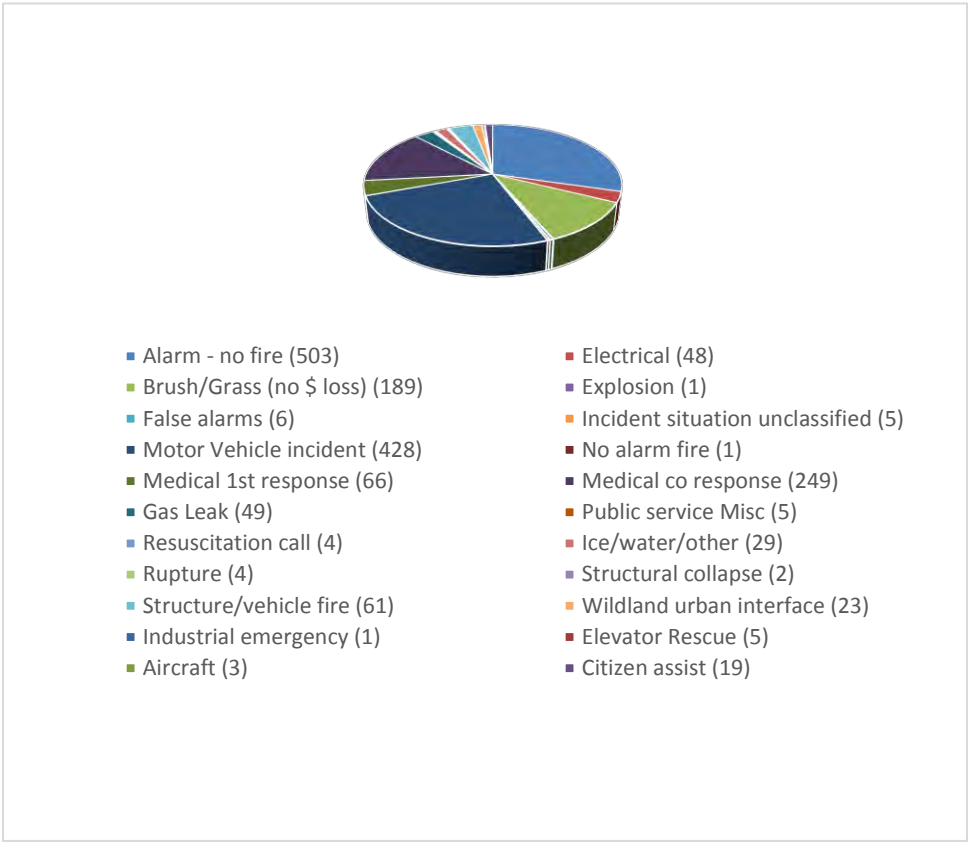


Table 25: CRFRS Average Response Time (2015)

Response Types	Leslieville Station 10	Condor Station 20	Caroline Station 30 Urban	Caroline Station 30 Rural	Nordegg Station 50	Rocky Mtn Station 60 Urban	Rocky Mtn Station 60 Rural	HDQ	Average
Incident Reports	31	46	10	53	35	152	126	1	57
Assistant Reports	69	61	11		5	15			32
Av. Dispatch Time	0:03:26	0:03:21	0:02:17	0:04:12	0:04:36	0:02:41	0:03:40	0:03:08	0:03:39
Av. Chute Time	0:05:32	0:06:34	0:07:12	0:06:24	0:08:38	0:05:27	0:06:49	0:00:37	0:05:35
Av. Enroute Time	0:13:44	0:09:46	0:07:07	0:16:37	0:20:46	0:03:40	0:14:33	0:08:43	0:12:52
Av. Response Time	0:22:37	0:18:41	0:13:36	0:24:08	0:36:11	0:09:08	0:34:50	0:20:51	0:25:02
Av. # Personnel On-scene	4	6	5	4	4	6	7	6	5

Table 26: CRFRS Average Response Time (2016)

Response Types	Leslieville Station 10	Condor Station 20	Caroline Station 30 Urban	Caroline Station 30 Rural	Nordegg Station 50	Rocky Mtn Station 60 Urban	Rocky Mtn Station 60 Rural	HDQ	Average
Incident Reports	30	39	18	78	23	143	153	143	78
Assistant Reports	84	94	11		2	32		32	42
Av Dispatch Time	0:03:26	0:02:50	0:04:14	0:04:09	0:05:11	0:02:12	0:03:12	0:02:12	0:03:23
Av Chute Time	0:06:30	0:04:46	0:09:25	0:08:38	0:05:30	0:06:10	0:07:09	0:06:10	0:06:43
Av Enroute Time	0:12:13	0:08:10	0:15:21	0:13:30	0:05:17	0:03:15	0:16:25	0:03:15	0:08:20
Av Response Time	0:32:00	0:13:17	0:23:58	0:21:22	0:10:23	0:16:43	0:23:31	0:16:43	0:17:44
Av # Personnel On-scene	4	5	4	4	3	6	7	6	5

Table 27: CRFRS Average Response Time (2017)

Response Types	Leslieville Station 10	Condor Station 20	Caroline Station 30 Urban	Caroline Station 30 Rural	Nordegg Station 50	Rocky Mtn Station 60 Urban	Rocky Mtn Station 60 Rural	HDQ	Average
Incident Reports	31	33	10	80	37	102	169	8	59
Assistant Reports	62	66	11		1	38		0	30
Av Dispatch Time	0:02:25	0:02:32	0:07:02	0:02:14	0:04:40	0:02:08	0:02:36	0:01:40	0:02:40
Av Chute Time	0:05:00	0:04:42	0:12:05	0:08:25	0:15:29	0:07:07	0:07:38	0:09:22	0:09:36
Av Enroute Time	0:13:12	0:12:55	0:09:04	0:16:43	0:23:41	0:03:04	0:12:51	0:34:59	0:18:16
Av Response Time	0:20:22	0:17:47	0:20:14	0:27:20	0:52:37	0:10:02	0:23:26	1:10:24	0:36:46
Av # Personnel On-scene	6	5	6	5	4	7	6	2	5

Table 28: CRFRS Average Response Time (2018)

Response Types	Leslieville Station 10	Condor Station 20	Caroline Station 30 Urban	Caroline Station 30 Rural	Nordegg Station 50	Rocky Mtn Station 60 Urban	Rocky Mtn Station 60 Rural	HDQ	Average
Incident Reports	40	29	14	67	36	126	158	3	59
Assistant Reports	10.00	9	5		0	6		0	5
Av Dispatch Time	0:02:08	0:01:49	0:00:46	0:02:24	0:04:12	0:02:17	0:03:04	0:00:56	2:35
Av Chute Time	0:06:09	0:07:28	0:10:47	0:08:35	0:12:04	0:06:37	0:07:47	0:10:02	9:01
Av Enroute Time	0:13:48	0:13:26	0:09:29	0:19:36	0:24:48	0:03:21	0:16:36	0:20:12	16:55
Av Response Time	0:20:08	0:25:04	0:20:28	0:47:08	0:42:15	0:10:05	0:14:25	0:30:14	0:28:49
Av # Personnel On-scene	8	8	5	8	7	6	8	4	7

Table 29: CRFRS Average Response Time (2019)

Response Types	Leslieville Station 10	Condor Station 20	Caroline Station 30 Urban	Caroline Station 30 Rural	Nordegg Station 50	Rocky Mtn Station 60 Urban	Rocky Mtn Station 60 Rural	HDQ	Average
Incident Reports	37	34	14	64	41	137	142	9	60
Assistant Reports	28.00	40	12		1	38		1	20
Av Dispatch Time	0:01:35	0:02:01	0:02:05	0:01:45	0:01:49	0:01:43	0:02:00	0:14:02	0:01:48
Av Chute Time	0:11:32	0:09:18	0:09:48	0:13:01	0:18:22	0:07:19	0:08:33	0:07:06	0:10:25
Av Enroute Time	0:09:50	0:09:39	0:02:21	0:14:02	0:24:19	0:02:52	0:14:59	0:17:33	0:09:45
Av Response Time	0:20:11	0:18:34	0:12:31	0:37:38	1:00:55	0:23:04	0:24:29	0:40:31	0:19:22
Av # Personnel On-scene	8	7	6	6	5	8	9	2	6

Table 30: CRFRS Average Response Time (YTD)

Response Types	Leslieville Station 10	Condor Station 20	Caroline Station 30 Urban	Caroline Station 30 Rural	Nordegg Station 50	Rocky Mtn Station 60 Urban	Rocky Mtn Station 60 Rural	HDQ	Average
Incident Reports	12	14	12	73	36	117	126	8	50
Assistant Reports	17	32	4		1	39		0	16
Av Dispatch Time	0:01:17	0:01:13	0:02:22	0:01:15	0:02:36	0:01:10	0:02:13	0:02:36	0:01:15
Av Chute Time	0:11:10	0:06:09	0:10:29	0:10:50	0:15:20	0:07:54	0:08:50	0:05:33	0:08:40
Av Enroute Time	0:09:13	0:10:32	0:02:41	0:12:50	0:25:23	0:03:40	0:11:50	0:12:32	0:09:52
Av Response Time	0:20:23	0:15:34	0:13:52	0:24:59	0:59:05	0:11:37	0:27:07	0:44:48	0:17:59
Av # Personnel On-scene	7	9	6	7	5	5	6	2	6

The call data that is collected by CRFRS provides valuable information that can be compiled and analyzed to develop ongoing or annual reports that detail the performance against approved standards. These can be in the form of written reports and/or dashboards. This information will assist Administration to make necessary adjustments in their service delivery. This information can also be provided to the Clearwater County Administration and Council where necessary.

Below is an example of a dashboard report that can be generated utilizing the information captured by a records management software.

Image 4: Sample Emergency Services Dashboard[15]

	Sept	YTD	Property Value
Total Dollar Loss	$ 20,000	$ 1,807,100	$ 24,774,025
Suspicious Fires	5	66	

	Sept Actual	Mthly Budget	Mth%	YTD Actual	YTD Budget	YTD%
Total	$ 1,462,500	$ 835,283	175.1%	$ 13,129,246	$ 10,026,860	130.9%
OT	$ 110,889	$ 31,051	357.1%	$ 788,343	$ 325,558	242.2%

	Sept	YTD	Targets
Training Hours	990	8,709	8,175
Avg Turnout Times - Fire Emergency	00:01:55	00:01:53	00:01:20
Avg Turnout Times - 1st Med Resp	00:01:30	00:01:31	00:01:00
Pre-plans entered	15	15	

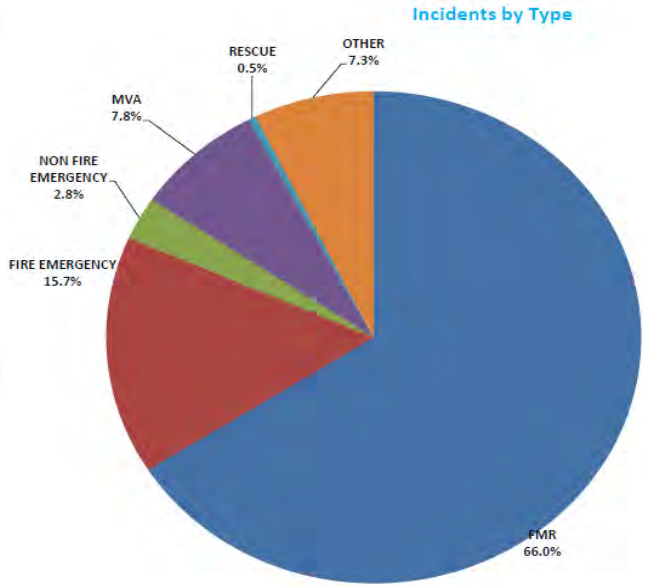
OT By Cost Centre	2014	2015	Difference
Suppression	$ 437,326	$ 732,551	$ (295,224)
Dispatch	$ 48,118	$ 35,210	$ 12,909
Prevention, Training & Admin	$ 33,065	$ 20,582	$ 12,483
All Departments	$ 518,510	$ 788,343	$ (269,833)

Dispatch	Sept	YTD	Projected	YTD %
Dispatch Incidents	2,631	23,256	32,234	72.1%
911 Call Volume	365	6,365		
			Targets	
% 911 Calls answered < 15 sec	99%	99%	95%	
% 911 Calls answered < 40 sec	100%	100%	99%	

Inspections	Current Mth Completions	Current Assigned Mth	YTD	YTD Targets
Total Inspected Properties	378	334	3761	3007
Fire Prevention Consults	53		450	
A Shift	38	40	314	317
B Shift	42	43	310	311
C Shift	34	35	317	320
D Shift	36	39	301	313
Inspectors	228	177	2519	1746

Public Education	Events	Attendees
	150	8,030

Incidents by Type	Sept	YTD	Proposed	YTD %
1ST RESP - MEDICAL ASSIST	535	5220		
1ST RESP - <<WAIT FOR POLICE>	1	98		
1ST RESP - CARDIAC	7	84		
FMR	**543**	**5,402**		
ALARM	75	622		
BURNING COMPLAINT	19	207		
SMOKE	7	106		
STRUCTURE FIRE	6	88	116	76%
MINOR FIRE	8	80		
WILDFIRE/GRASS/BRUSH/OUTDOOR	3	67		
CAR FIRE	8	45	64	70%
RECHECK	2	40		
CHIMNEY FIRE	0	20		
OVEN/POT ON STOVE	0	6		
EXPLOSION	0	3		
FIRE EMERGENCY	**128**	**1,284**		
CARBON MONOXIDE ALRM	7	72		
GAS/OIL SMELL/SPILL	8	54		
NATURAL GAS LEAK	5	44		
POWER/TEL/CABLE LINE DOWN	2	30		
AIRCRAFT STANDBY/INCIDENT	0	15		
PROPANE LEAK / SMELL	1	12		
HAZARDOUS MATERIAL	1	4		
BOMB THREAT	-	-		
NON FIRE EMERGENCY	**24**	**231**		
MVA/EXTRICATION	53	389		
MVA	47	250		



[15] *Source: City of Kelowna Fire Services*

Observation #21: *CRFRS has access to extensive amount of data captured from all their activities. There is a requirement in the Intermunicipal Regional Fire Services Agreement to share CRFRS performance statistics in an annual summary report to the partner municipalities. Feedback from the regional partner councillors expressed concern that they were not getting these reports.*

Recommendation #21: Utilize records management and data tracking software to collect and analyze response performance

(Suggested completion: 12 -24 months)

It is recommended CRFRS conduct a minimum of quarterly reviews of response experience utilizing appropriate record, data tracking, and performance measuring tools for collection and analysis of performance objectives. Structuring a consistent process of acquiring and analyzing the information in a consistent fashion will assist the CRFRS Administration in identifying gaps in their service objectives.

4.3.2 Paid-On-Call Firefighters: Challenges and Limitations

A major concern for the majority of POC and volunteer fire services is the availability of firefighters to respond to initial calls for assistance, as well as ensuring an appropriate ERF for all types of emergencies. CRFRS recognizes this issue, particularly during the normal work week daytime hours, where paid-on-call firefighters are working their full-time job or otherwise unavailable. This issue is not unique to CRFRS, as many POC composite fire departments face the challenge of maintaining an effective firefighting complement to consistently meet the demands of their community.

CRFRS currently relies on one of their Chief Officers to be on-call on a rotating basis during the daytime, evening, and weekend hours. While this does provide a CRFRS response capability, it has created some administrative and management challenges that are discussed in Section 4.

The ability of the CRFRS to effectively assemble an initial response during evenings/weekends and holidays continues to be a challenge in some of their fire stations. The time for firefighters to travel to the station for deployment varies from station to station, but significantly adds to the total response time objectives. Individual firefighter response times can be affected by time of day, traffic, rail delays, weather, and other issues outside of their control. The increasing commitment required of POC firefighters may be a major impediment for some of the members of CRFRS.

As call volumes increase and other department obligations increase, it is not uncommon that individual firefighters become somewhat selective on the calls they respond to. Advancements in notification processes have improved information out to the responders but have the unintended consequence of allowing the firefighter to be somewhat selective to the types of calls they respond to.

There are no criteria that establishes the number of POCs required that is appropriate for any given population or call volume. Rather, the key is to monitor the level of participation of each member's participation in responses and training requirements. Typically, 33% of the members are consistently active and participate in the bulk of training sessions and responses amongst POC fire services like CRFRS. This is indicative of the POC firefighter limitations and cannot be interpreted as a performance shortfall for any of the CRFRS POCs that cannot be as active as they would perhaps like to be. CRFRS Administration recognizes this and consciously encourages a proper life balance through wellness, fitness programs, and other initiatives that balance department commitments and the POC's availability.

Legislative requirements for training and certifications have increased significantly over the last number of years for firefighters. In a recent FUS article5 the following was identified as some of the challenges/limitations of a volunteer/paid-on–call emergency response system:

Volunteerism Down

Roughly 80% of fire departments in Canada are staffed by volunteers. That means that when a building is on fire, there will be several extra minutes in total response time as firefighters need to travel from their homes or places of work to the fire hall before suiting up and responding to the fire scene with an engine.

In years past, before the digital age, participating as a volunteer on the local fire department was a fun way to be part of the local community. It seems, however, that people's lives have become busier and volunteering on the local fire department is seen more as a second job than a way to be part of the community.

This is exacerbated by businesses that historically were very supportive of volunteer fire departments, but that in recent decades have pulled their support. In fact, more and more businesses are advising their employees that they are not allowed to leave while on shift. This may be understandable since businesses are focused on producing their own financial results, which are unlikely to benefit from having employees called away in the middle of shifts, leaving their posts unmanned.

There are many factors that have resulted in the downward trend in volunteer firefighting, including location economics. Firefighters often do not live and work in the same town. In Vancouver, for example, few firefighters can afford to live in the city, so they have homes in cities like Coquitlam, Maple Ridge or Surrey, which may result in their place of residence being farther away from the fire station.

An interesting side note is that many insurers assume large cities are 100% career fire forces, but this is not the case. More and more cities are looking to reduce their overhead by cutting fire department budgets and fire departments are turning to volunteer or paid on-call models to maintain some level of fire protection.

The biggest factor in reduced volunteerism seems to be apathy. More people are assuming that they do not need to contribute as someone else will. When it comes to public fire protection, however, this can have very serious consequences. A lack of standards for training firefighters has been identified as a serious problem.

There are several standards for training firefighters, but they are expensive and time-consuming to implement. The result is that most communities do not implement them. In fact, a recent study for British Columbia firefighters found it was not economically feasible to train firefighters to the minimum National Fire Protection Association Standard Level 1. For volunteer fire departments, this is a big problem, and for the communities that they serve, there is a significant liability exposure in having emergency responders who are not certified Level 1 firefighters responding to very dangerous incidents on behalf of the community. This is beyond the serious risk to firefighters themselves.[16]

The Fire Chief needs to get the cooperation from his officers to provide significant oversight of their assigned battalions to ensure that all the POC firefighters always recognize and accept the level of commitment expected of them in the goal of providing safe and effective fire response. There is a point in the growth of a community where reliance on a POC firefighting complement alone is insufficient for the actual and potential risks that exist. It is our opinion that CRFRS is not at this point in their assessed risk factors and growth that warrants a full-time firefighter department. There has been a recent shortfall of POC firefighters in the Nordegg fire station that needs to be addressed. Although there are a few options to attempt to address this shortfall, one that has been considered is to hire full-time firefighters for that fire station. That option to date has not been politically supported and may cause some internal conflict for the CRFRS.

Over the next 1-2 years, a continuous review of the response statistics as identified in this report is crucial in validating the effectiveness of their service in terms of public and firefighter safety. Should the response statistics over the next five years or less indicate that CRFRS response performance is not meeting the service levels set by Clearwater County Council in the Intermunicipal Fire Service Agreement, the transition to an enhanced composite department with additional full-time staff would be required.

4.4 Response Time Maps

The more strategically located a station is in a community and the more direct the travel routes are between the stations and different parts of the community, theoretically, the lower the response times will be from that fire station. Response times typically refer to the combination of call handling, enroute and response/travel time.

4.4.1 Response Map Analysis

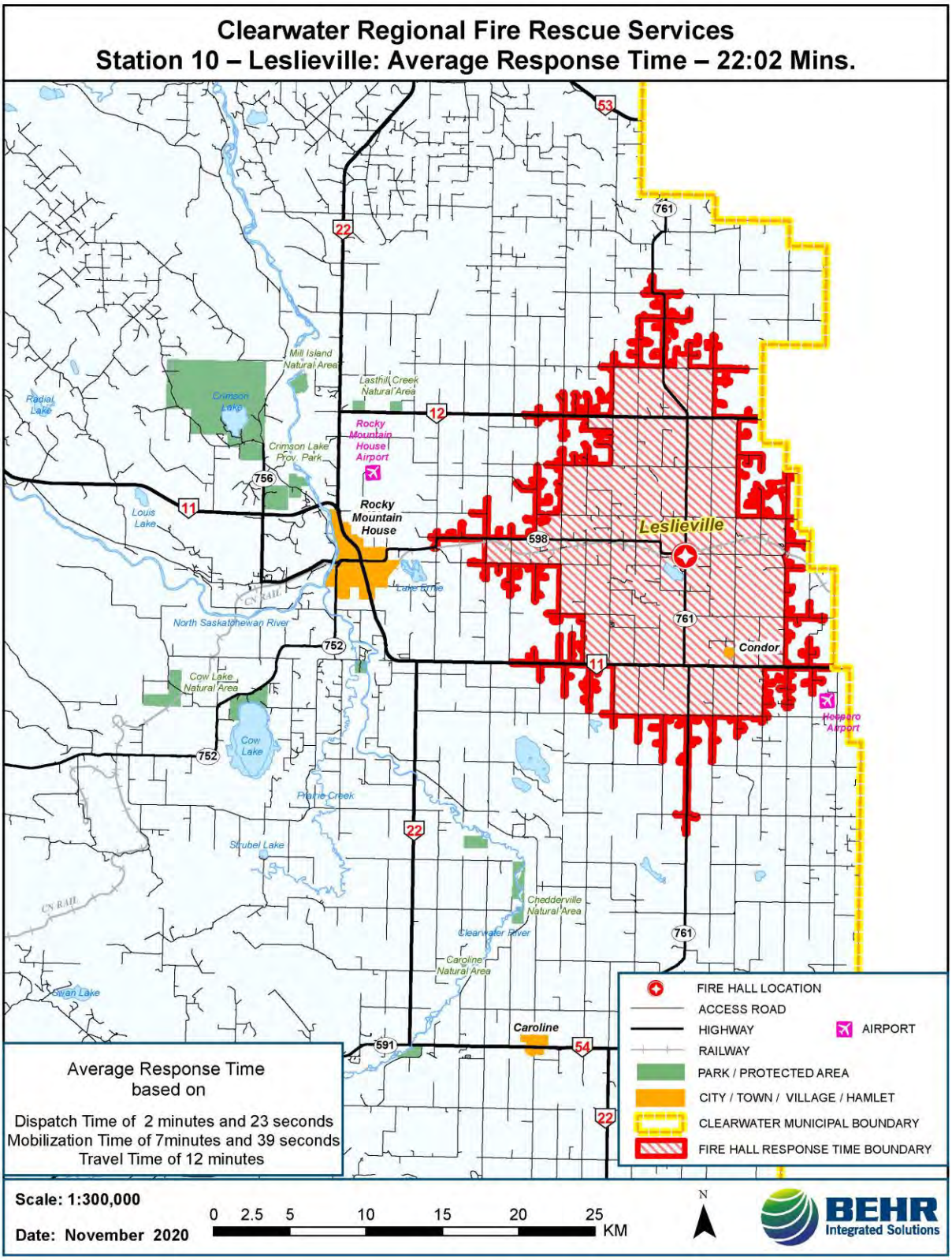
Response travel time is a product of the distance that must be traveled between the station and the incident and the speed travelled to the incident. The more centrally located a station is in a community and the more direct the travel routes between the stations and different parts of the community, the lower the theoretical response times will be from that fire station. CRFRS fire stations are geographically located, and target positioned within the large Clearwater County region.

[16] *Reference: https://www.canadianunderwriter.ca/features/far-from-standard/*

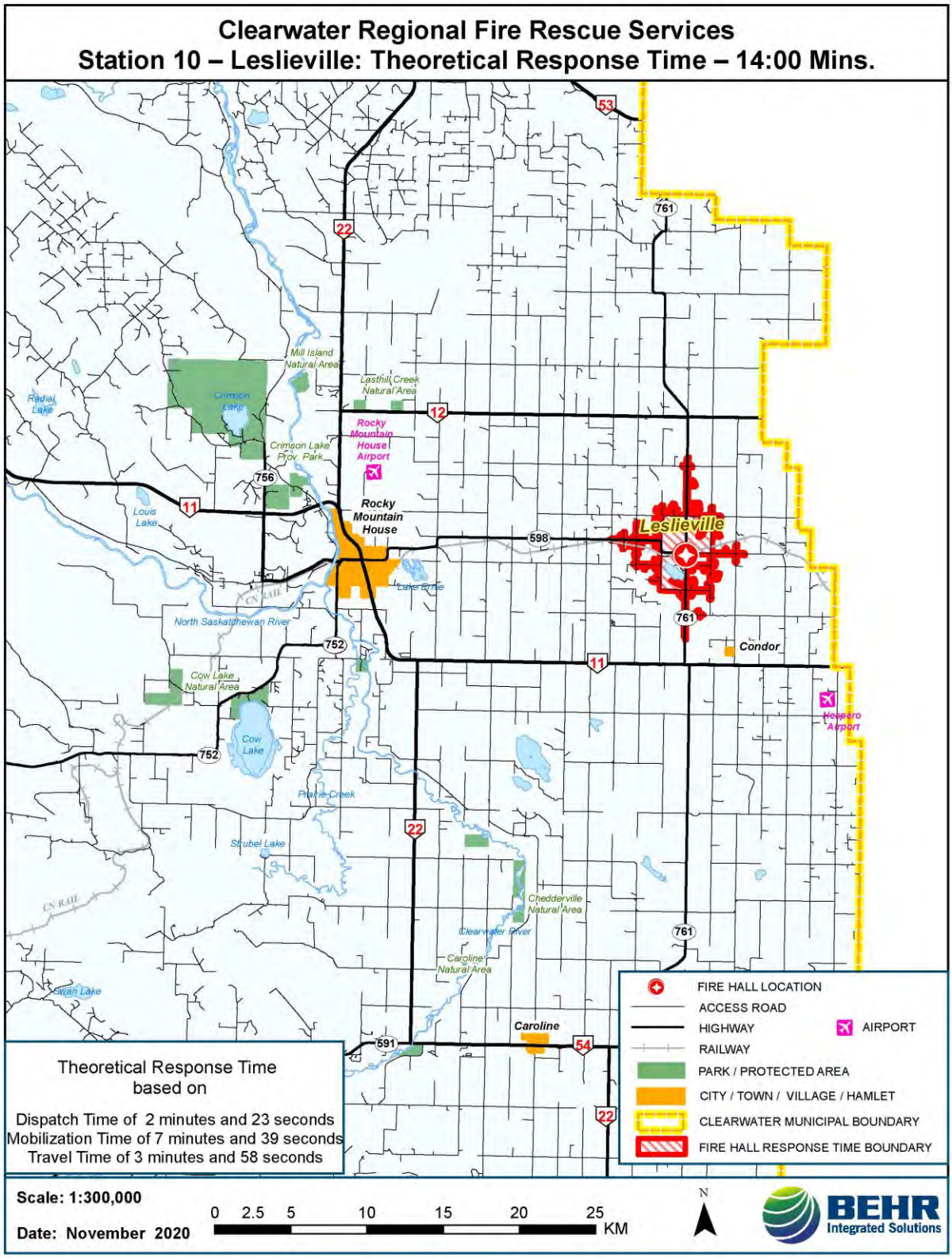
The Clearwater County Local Service Area is 18,921 km^2 with a population of approximately 18,000. Based upon NFPA 1720, this County would be categorized as mostly remote with areas of rural, urban, and suburban populations. Given the assessed risk factors identified in this review regarding industrial and commercial activities, transportation corridors, urban wild-fire interface, water distribution systems for firefighting and distance from neighboring communities, it was considered prudent to examine appropriate response time standards.

Note: *NFPA is an industry best practice guideline only, and not a requirement. GIS response mapping methodology is available in Appendix C, p. 158*

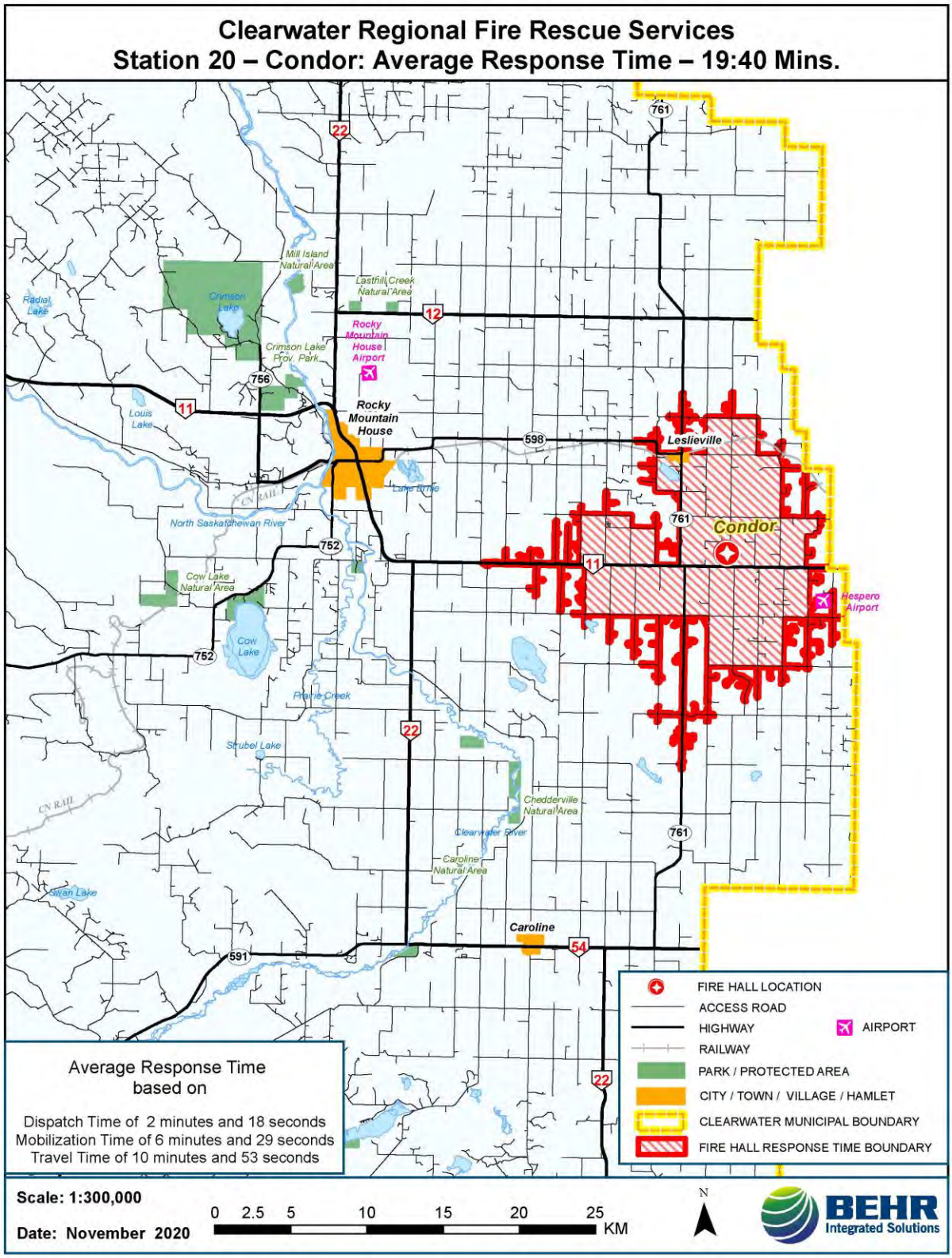
Map 5: Station 10 – Leslieville Average Response Time



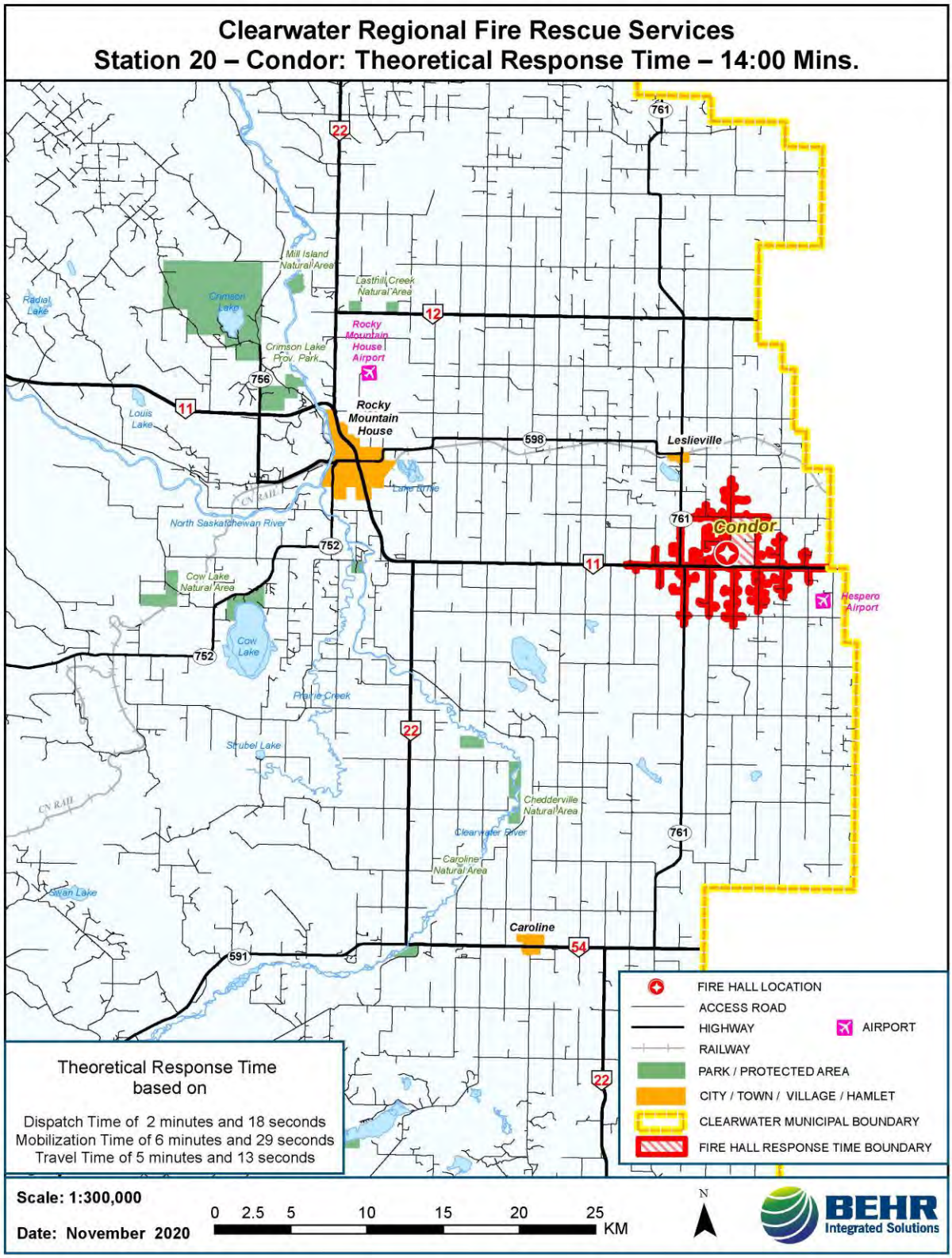
Map 6: Station 10 - Leslieville Theoretical Response Time



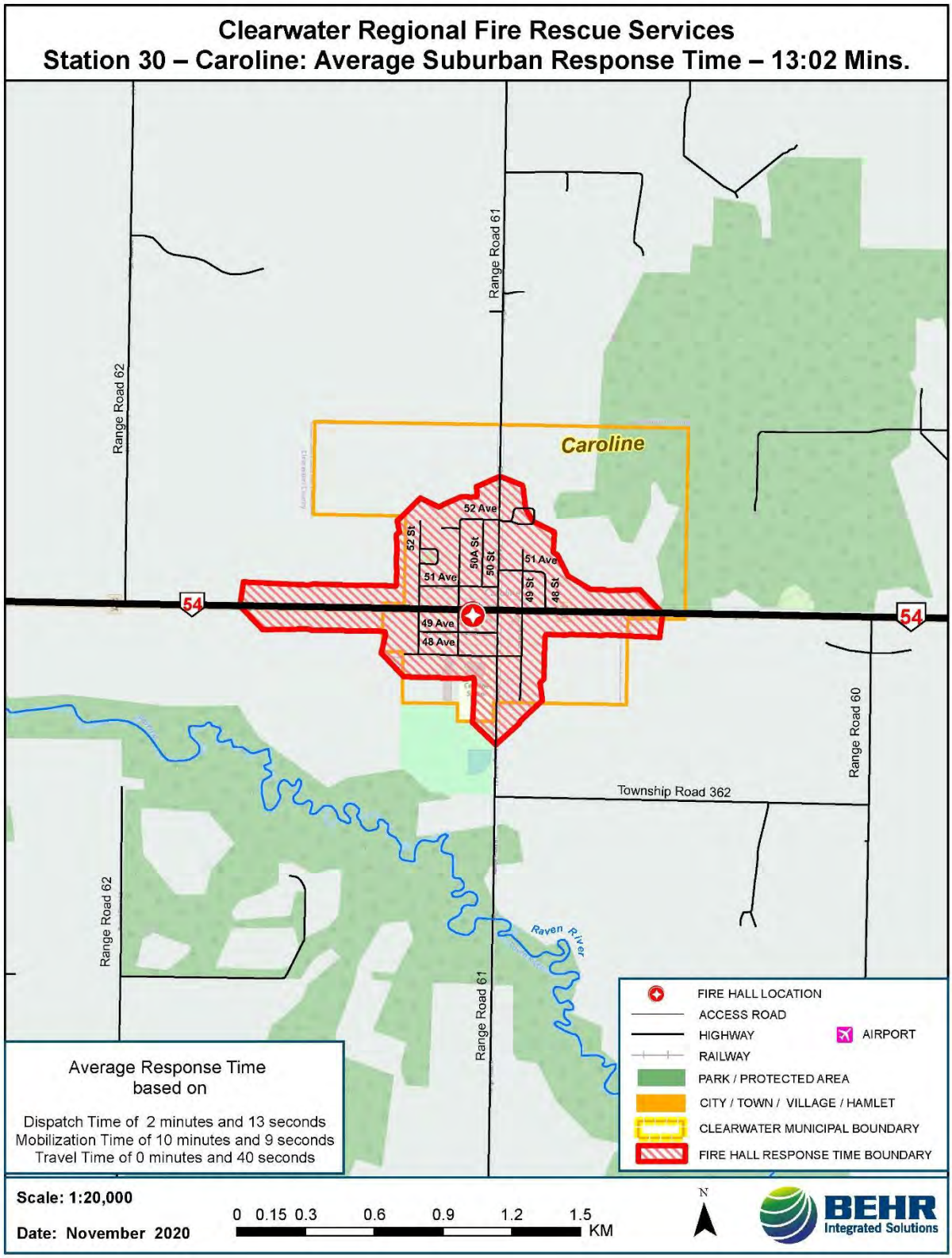
Map 7: Station 20 – Condor Average Response Time



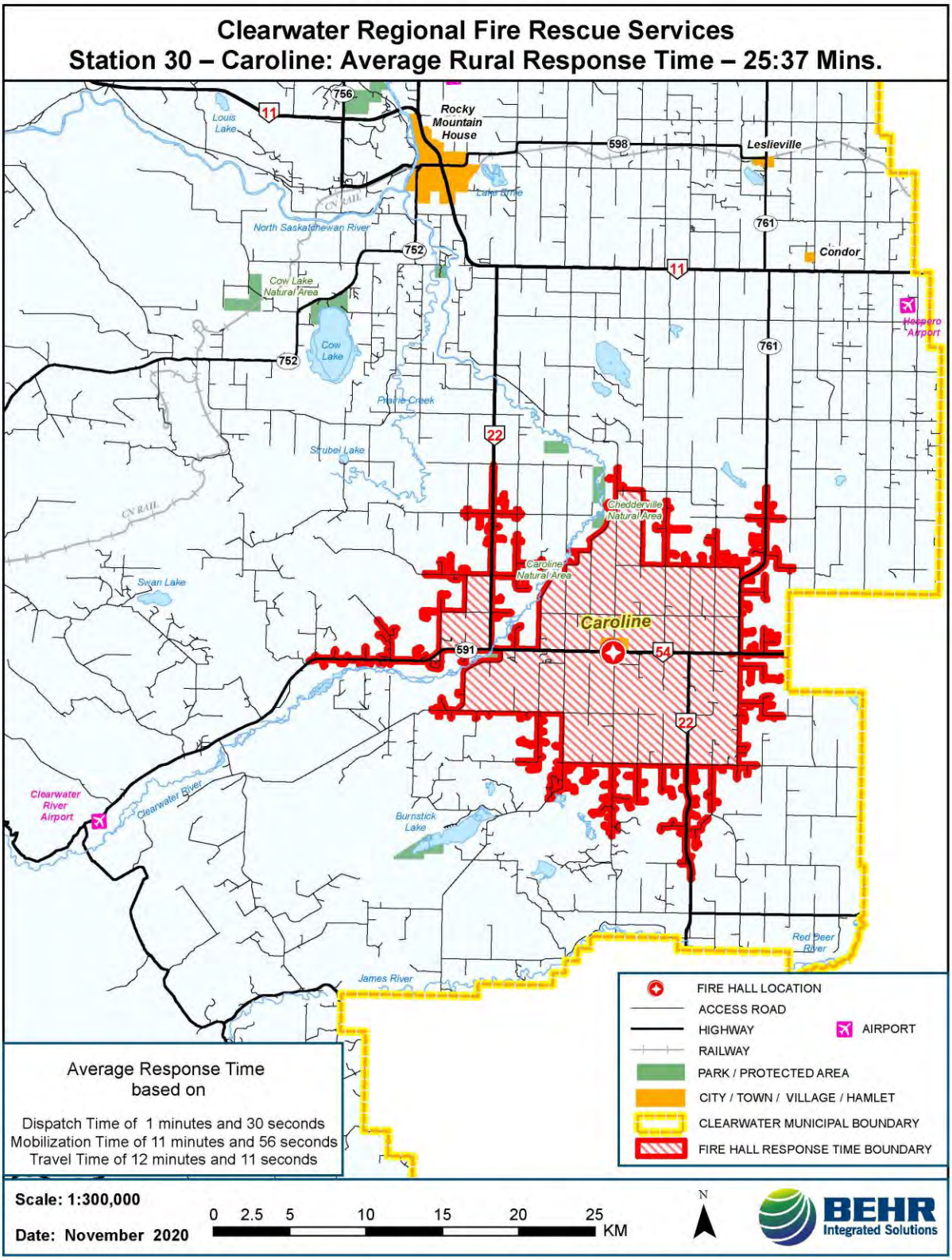
Map 8: Station 20 – Condor Theoretical Response Time



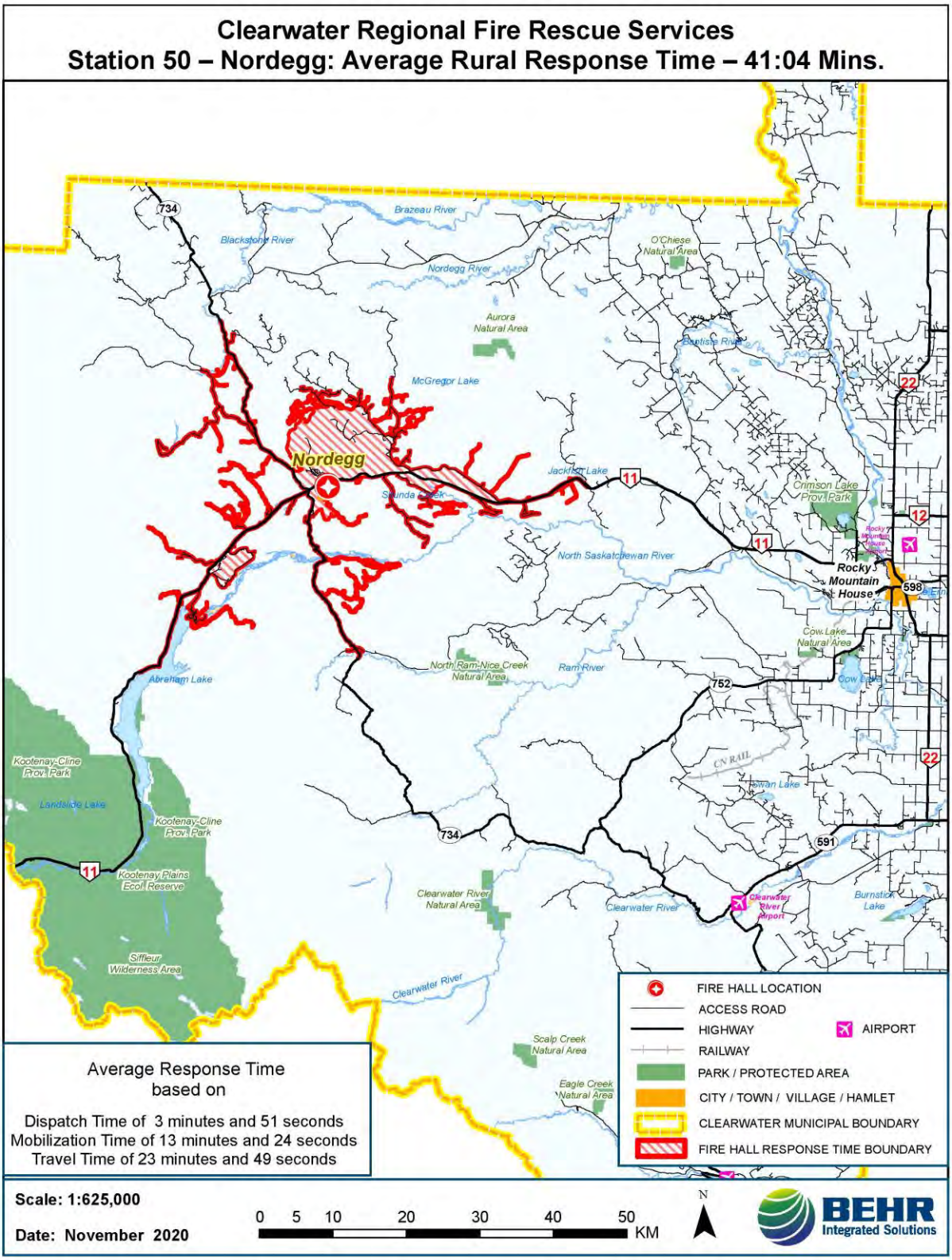
Map 9: Station 30 – Caroline Average Suburban Response Time



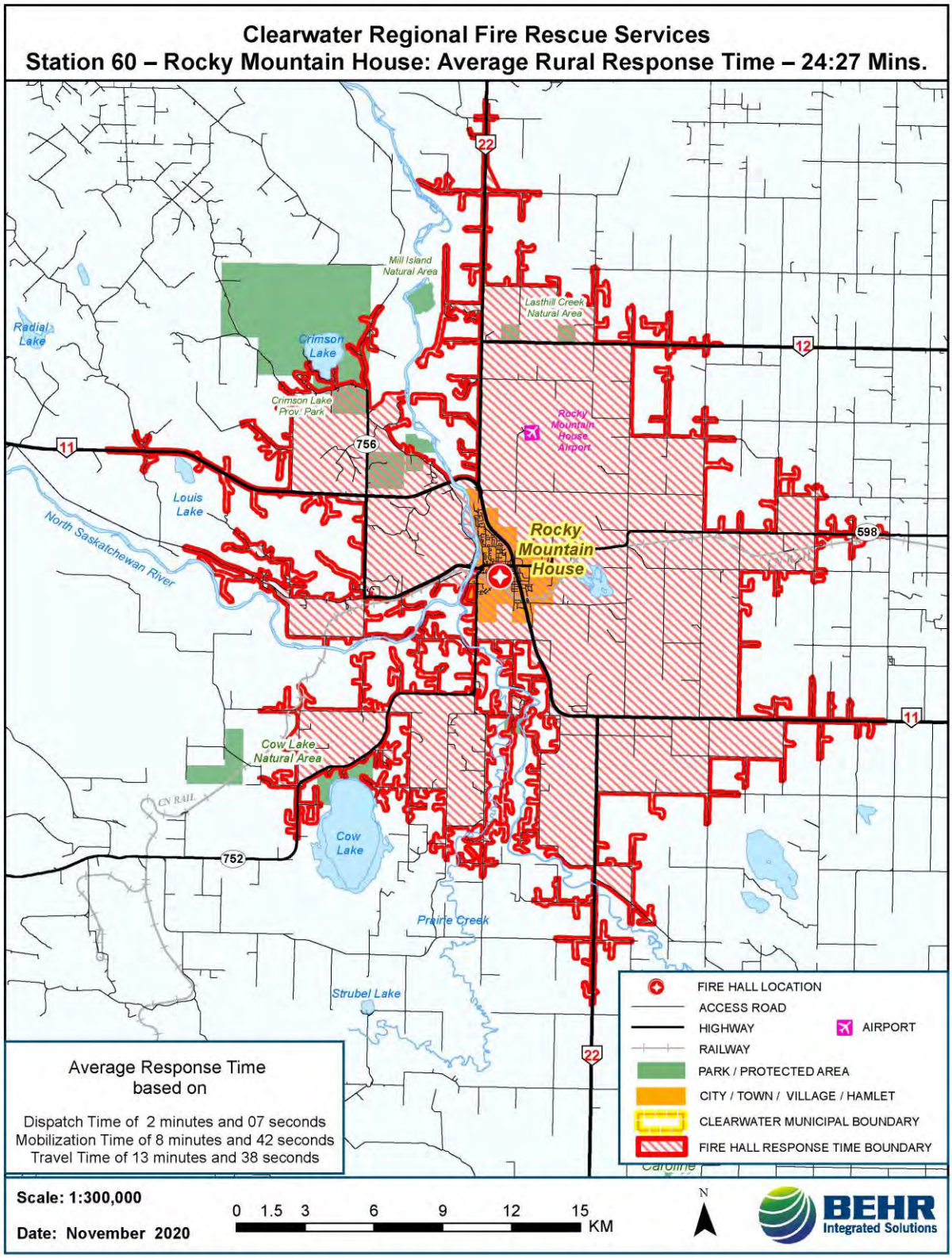
Map 10: Station 30 – Caroline Rural Response Time



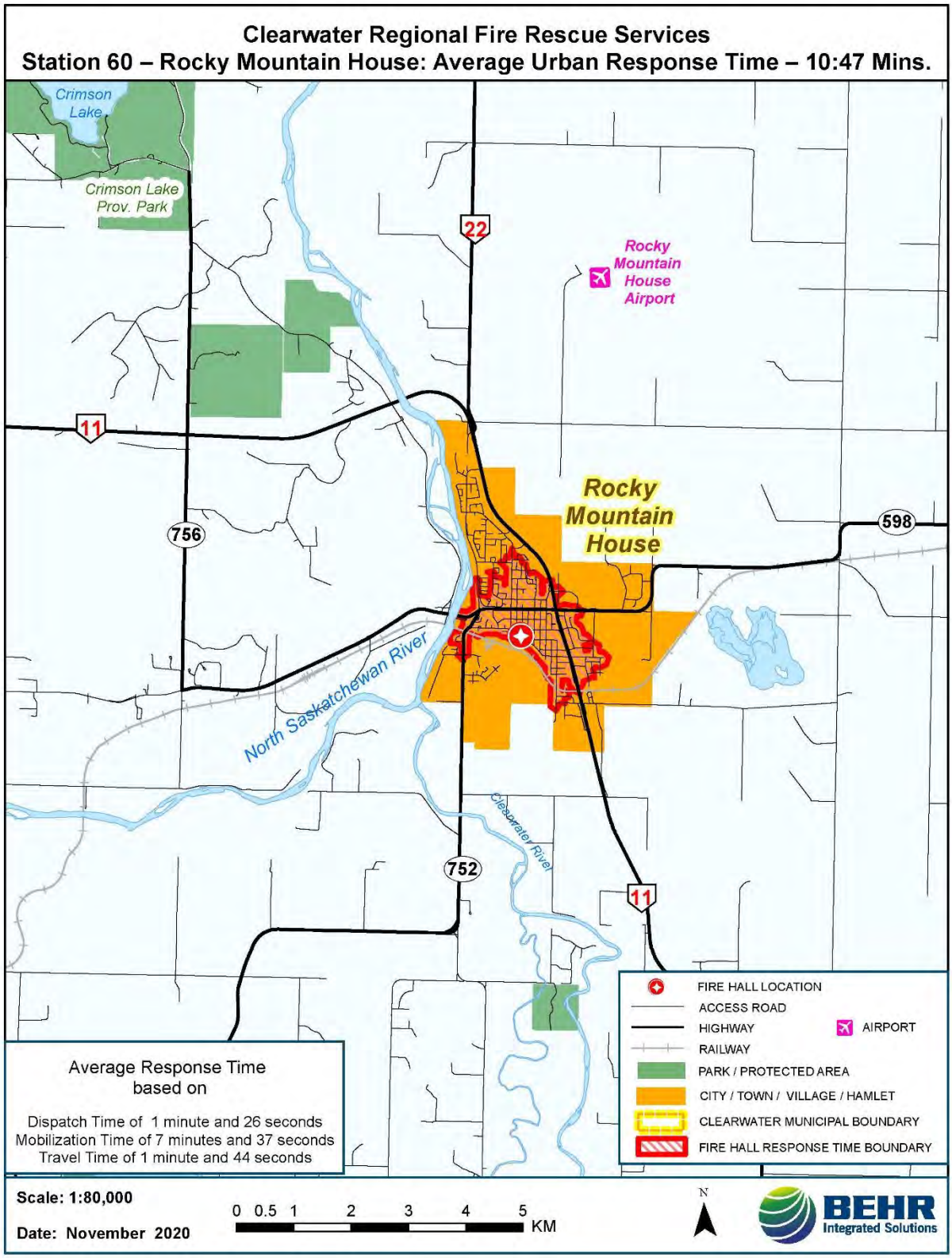
Map 11: Station 50 – Nordegg Average Rural Response Time



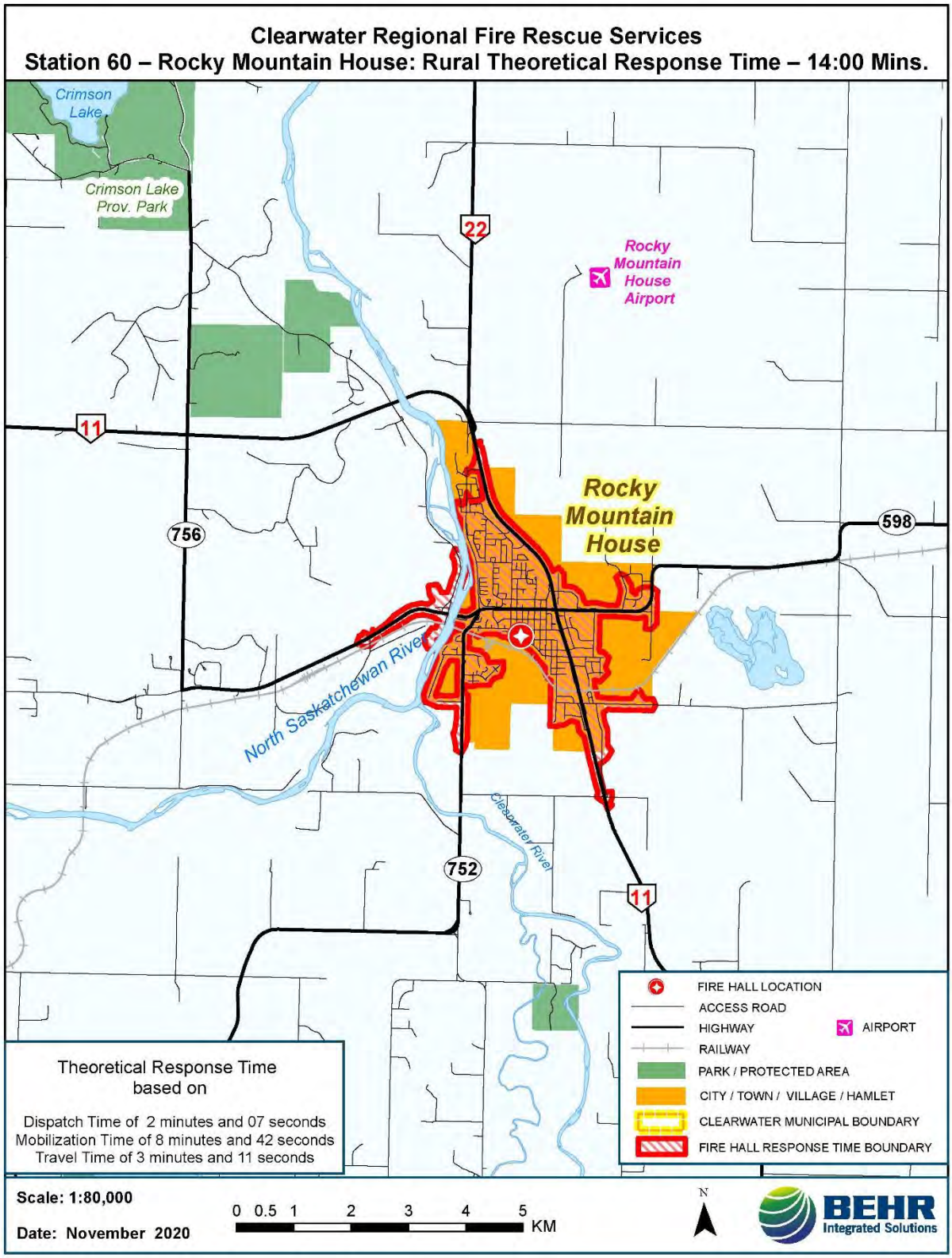
Map 12: Station 60 – Rocky Mountain House Average Rural Response Time



Map 13: Station 60 – Rocky Mountain House Average Urban Response Time



Map 14: Station 60 – Rocky Mountain House Theoretical Response Time



The analysis of these maps indicates that in addition to the average dispatch time recommendation to include consistent use of pre-alerts, the mobilization times from each station appear to be prolonged. The limitations of the POC service model is completely understood, however average response times derived from the data are significantly beyond the leading practice of NFPA 1720 and the ABC 10-minute response time for new developments. In our experience, POC departments average mobilization time ranges from 4-7 minutes

Based upon this, the SOC previously recommended must consider mobilization times and the various demands zones of urban, suburban rural and remote. It is suggested that the Fire Chief reviews the mobilization times with POCs at each station to determine what the challenges are if any and what can be implemented to shorten this time increment.

4.5 Critical Task Analysis

A fire company is defined as the team of firefighters assigned to a fire apparatus. A comprehensive report issued by the National Institute of Standards and Technology identifies the optimum number of members for a fire company necessary for the most effective completion of the over 22 essential fire ground tasks at a typical single-family house fire. On average, a four-member crew operating on a structure fire completed all the tasks on the fire ground seven minutes faster (nearly 30%) than the two-person crews. The four-person crews completed the same number of fire ground tasks 5.1 minutes faster on average (nearly 25%) than the three-person crews.

On the medium-hazard residential structure fire, adding a fifth person to the crews did not decrease overall fire ground task times. However, it should be noted that the benefit of a five-member crew was not documented. NFPA recommends that for a standard single-house residential fire that a minimum 16 firefighters are required for a full alarm assignment. The tables below depict the typical critical tasks that need to be performed at the various FFD response types.

Table 31: CRFRS Apparatus Optimum Staffing Capacity

Description	Optimum Min/Max Staffing Capacity
Class 'A' Pumper	Min 4 – Max 6
Quint Articulating Ladder	Min 4 – Max 6
Class 'A' Pumper	Min 4 – Max 5
Heavy Rescue	Min 4 – Max 6
3000 gal. Tender	Min 1 – Max 2
Bush Truck	Min 2 – Max 5
Rehab/Command Trailer	Rehab/Command Trailer
Officer Vehicles	Officer Vehicles

Response policies and guidelines are based on optimum minimum numbers; in some responses the optimum numbers may not be available initially due to lack of trained responders. When this occurs, the fallback is to request mutual aid assistance to safely conduct/complete the operation. The order in which an apparatus departs the station is based upon the available staffing and qualifications of the firefighters. Typically, the engine will be the initial response with the ladder, rescue and tanker following depending upon the incident and available staff. Below is an example of resource requirements based on the hazard risk:

Table 32: Low Risk (no exposures): garbage, vehicle – private, grass, Investigate (external), monitoring alarm (w/o confirmation)

Initial Deployment	No. FF	Task Assignment
Engine	4	Incident Command, safety, establish perimeter, pump operation, 2 FF with hand line, forcible entry, battery disconnect, product containment.
Total Personnel	4	

Table 33: Low Risk (no exposures): shed, detached garage

Initial Deployment	No. FF	Task Assignment
Engine	4	Incident Command, safety, establish perimeter, engine operation, 2 FF with hand line, forcible entry.
Ladder	4	Perimeter Control, safety, water supply, RIT.
Total Personnel	8	

Table 34: Moderate Risk (with exposures): grass/wildland

Initial Deployment	No. FF	Task Assignment
Bush Truck	4	Incident Command, safety, establish perimeter, engine operation, two FF with hand line, brooms.
Water Tender	2	Water Supply
Engine	4	Manpower for operations
Deputy or Fire Chief	1	Overall command based on incident size
Total Personnel	11	

Table 35: Moderate Risk: Attached garage, single family residential (detached/duplex)

Initial Deployment	No. FF	Task Assignment
Engine	4	Incident Command, safety, establishes perimeter, engine operation, forcible entry, search, and rescue and/or suppression.
Ladder	4	Ventilation, utilities, search, and rescue and/or suppression.
Rescue	4	
2nd Engine	4	Water supply, laddering, RIT.
Deputy or Fire Chief	1	Overall Incident Command, safety, accountability, resource management.
RDU & Pickup truck		Rehab, Command area, protection from elements
Total Personnel	12	

Table 36: High Risk: Commercial, industrial, strip mall, warehouse, mid-rise residential

Initial Deployment	No. FF	Task Assignment
Ladder	4	First Officer assumes Incident Command and forms attack team with second officer and four FF. Two driver/pump operators establish exterior water connections, water supply, pump operation.
Engine/3rd Engine	6	Primary Search and Rescue
Rescue	4	
3rd Engine	4	Exposure protection/RIT
Deputy and Fire Chief	1	Overall Incident Command, safety, accountability, resource management.
RDU & Pickup	2	Rehab, Command area, protection from elements
Total Personnel	15	

Table 37: Moderate Risk: FMR Emergency, vehicle vs. pedestrian

Initial Deployment	No. FF	Task Assignment
Rescue	4	Incident Command, safety, patient assessment, CPR, AED, oxygen, patient packaging
Engine	4	Traffic Management
Total Personnel	8	

Table 38: Moderate Risk: Motor vehicle crash (1-3 private vehicles)

Initial Deployment	No. FF	Task Assignment
Rescue	4	Incident command and size-up, safety, establish outer perimeter, pump operation, 2 FFs prepare hand line.
Engine	4	Establish inner perimeter, triage patients, patient care, extrication, patient packaging.
Tanker	2	
Total Personnel	8	

Table 39: Moderate Risk: Surface water, swift water or ice rescue, animal rescue

Initial Deployment	No. FF	Task Assignment
Engine	4	Officer of first engine on scene assumes command, size up, scene safety and communications. 1 FF victim contact. 2 FFs shore rescue if possible or Safety team for water rescue team activity.
Rescue	4	Officer of rescue team is the sector officer, supervise and safety. 3 FFs prepare equipment for rescue.
RDU & Pickup		Rapid Deployment Unit is equipped with power and heat and can be used for changing clothing, pet care etc. and general protection from the elements
Total Personnel	8	

Table 40: Low Risk: Carbon monoxide alarm, small spill cleanup, investigates smell, needle removal

Initial Deployment	No. FF	Task Assignment
Engine	4	Incident Command, scene safety, establishes isolation perimeter, air monitoring, ventilation, or cleanup.
Total Personnel	up to 4	

Table 41: Moderate Risk: Small quantity (<20 ℓ) of known product (gasoline, anti-freeze), open space natural gas smell or odor from unknown source

Initial Deployment	No. FF	Task Assignment
Rescue	4	Site management and control identify problem.
Engine	4	
Spill response Unit	2	• Hazard and risk evaluation • Selection of personal protective equipment • Information management and resource coordination • Implement response objectives • Decontamination and clean-up operations • Terminate the incident
Deputy or Fire Chief	1	Overall Incident Command, safety, accountability, resource management.
Total Personnel	11	

Table 42: Special Risk: Quantities (between 20 and 75 ℓ) of known product (gasoline, anti-freeze), natural gas leak, indoor natural gas smell or odor

Initial Deployment	No. FF	Task Assignment
Rescue	4	• Site management and control
Spill Response Unit	3	• Decontamination of FF personnel
Ladder	4	• Manpower and scene control • Safety and emergency decontamination
Dangerous Goods response from alternate agency		• Identify problem • Selection of personal protective equipment • Implement response objectives • Decontamination and clean-up operations • Terminate the incident
Deputy and Fire Chief	1	• Hazard and risk evaluation • Information management and resource coordination
Total Personnel	**12**	

Table 43: High Risk: Large quantity (>75 ℓ) of known product, known hazardous product, unknown substance, large exposure, or train derailment

Initial Deployment	No. FF	Task Assignment
Rescue	4	• Site management and control
Engine	4	
Hazardous Materials response from alternate agency	4	• Identify problem • Selection of personal protective equipment • Implement response objectives • Terminate the incident
Rescues, ladder, and tower	6	• Decontamination and clean-up operations
Deputy and Fire Chief	2	• Hazard and risk evaluation • Information management and resource coordination
RDU & Pickup truck		• Rehab, Command area, protection from the elements
Total Personnel	+20	

Notes: *Coincidental and sequential calls for service occur often. In this case decisions are made based on risk and need.*

SECTION 5
CONCLUSION

This master plan was completed is to assist Clearwater County and the Clearwater Regional Fire Rescue Services (CRFRS) in evaluating their current fire services and establishing a long-term strategy to provide efficient and effective fire, rescue, and emergency services for their regional community.

Behr analyzed several factors to determine the effectiveness and efficiency of the CRFRS. We evaluated the operational and administrative aspects of the department, as well as the regional community profile, risk factors, core services and programs, training, recruitment, and retention of Paid-on-Call (volunteer staff), facilities and major equipment.

Additionally, we evaluated the mutual aid agreements for emergency response and/or emergency management through contractual arrangements with several Counties and Towns. The response data from CRFRS was assessed with a focus on the current capabilities and alignment with both existing and projected risks, and levels of demand.

It is important to note that CRFRS is a well led, managed, and resourced POC composite fire service. We would like to specifically acknowledge the professionalism, leadership, diligence, and continuous improvement focus of Fire Chief, Steven Debienne, and the entire team of CRFRS.

There are several observations and recommendations in this review that need to be considered by the municipalities to improve operational effectiveness and efficiencies. Key among the 21 proposed recommendations is the establishment of a Standards of Cover Policy that identifies service levels for the diverse demand zones within the County, recruitment and retention of POCs, implementation of cyclical fire inspection program, and the functionality of the Rocky Mountain House and Caroline Fire Stations.

Although each recommendation has a corresponding timeframe, it is important to note this master plan needs to be re-visited on a regular or annual basis to confirm that the observations and recommendations remain applicable.

Implementation of the recommendations outlined in this master plan will better position CRFRS to mitigate community risk factors, monitor response capabilities and performance, while maintaining both excellent community relationship and value for money.

APPENDIX 'A'
GLOSSARY OF TERMS

Apparatus	Any vehicle provided with machinery, devices, equipment, or materials of the Fire Department for firefighting as well as equipment used to transport firefighters or supplies.
Assembly Time	From the time the notification sounds in the fire station until the first vehicle leaves the station. In a full-time department this is expected to be within 80 seconds but for volunteer departments the time to collect a response crew can vary widely depending on location and time of emergency as well as all the factors that impact travel time.
Chute Time	See Assembly Time
Dangerous Goods	This term is synonymous with the terms hazardous materials and restricted articles. The term is used internationally in the transportation industry and includes explosives and any other article defined as a combustible liquid, corrosive material, infectious substances, flammable compressed gases, oxidizing materials, poisonous articles, radioactive materials, and other restrictive articles.
Discovery	This is the time between the start of the emergency and when someone or an engineered system has detected the incident.
Dispatch Time	This is the time required to extract the necessary information from the caller to allow the proper response to be initiated. The dispatcher identifies the correct fire location and initiates the dispatch by paging the appropriate fire station.
Emergency Call	This is the period between discovery and the actual notification of emergency services.
Emergency Communications Centre (ECC)	A facility dedicated to service receives calls, processes them, and then dispatches emergency units to the correct location in the appropriate time-period.
Emergency Operations Centre (EOC)	The protected sites from which civil officials coordinate, monitor, and direct emergency response activities during an emergency or disaster.
Emergency	Any occasion or instance that warrants action to save lives and to protect property, public health, and safety. A situation is larger in scope and more severe in terms of actual or potential effects.
Fire Suppression	The application of an extinguishing agent to a fire at a level such that an open flame is arrested; however, a deep-seated fire will require additional steps to assure total extinguishment.
Hazard Analysis	A document, which identifies the local hazards that have caused, or possess the potential to adversely affect public health and safety, public and private property, or the environment.

Impact	The effect that each hazard will have on people such as injury and loss, adverse effects on health, property, the environment, and the economy.
Incident	A situation that is limited in scope and potential effects.
Intervention Time	The time from fire reporting to the point where the first arriving pumper, or other apparatus providing comparable functions, arrives at the fire scene and directs an extinguishing agent on the fire.
Mutual Aid Agreement	An agreement between jurisdictions to assist each other during emergencies by responding with available manpower and apparatus.
National Fire Protection Association	The National Fire Protection Association (NFPA) is an internationally recognized trade association established in 1896 that creates and maintains standards and codes for usage and adoption by local governments to reduce the worldwide burden of fire and other hazards. This includes standards and guidelines to which many fire departments utilize to carry on day-today operations.
Response	Those measures undertaken immediately after an emergency has occurred, primarily to save human life, treat the injured, and prevent further injury and losses. They include response plan activation, opening and staffing the EOC, mobilization of resources, issuance of warnings and direction, provision of aid, and may include the declaration of a State of Local Emergency.
Risk	The chance or likelihood of an occurrence based on the vulnerability and known circumstances of a community.
Setup Time	This is the time necessary on site to evaluate the necessary actions, position the required resources and commence the intervention. In the case of a fire, completing size-up, assigning the necessary tasks, and deploying resources can provide delays on scene. A well-trained crew can minimize these delays while providing a safe, successful response.
Standard Operating Guidelines (SOG)	A written organizational directive that establishes or prescribes specific operational or administrative methods to be followed routinely, which can be varied due to operational need in the performance of designated operations or actions.
Standard Operating Procedures (SOP)	A written organizational directive that establishes or prescribes specific operational or administrative methods to be followed routinely for the performance of designated operations or actions.
Travel Time	Once a vehicle leaves the station, it must negotiate the best route between that point and the location of the emergency. Factors to consider for travel time are driver skill, weather, traffic, topography, road conditions and vehicle capabilities.

APPENDIX 'B'
LIST OF FIGURES, MAPS, IMAGES, AND TABLES

Item	Description	Page
Figures		
Figure 1	Master Planning Process	3
Figure 2	Clearwater County 10-Year Growth Trend	9
Figure 3	Rocky Mountain House 10-Year Growth Trend	10
Figure 4	Percentage of Population by Age Categories	10
Figure 5	Risk Evaluation Matrix	17
Figure 6	CN Rail Route in Clearwater County	27
Figure 7	Clearwater County Forest Protection Area	29
Figure 8	SOG 671 Task Assignment	68
Figure 9	Number of Firefighters that Respond to the Station by Station by Year	108
Figure 10	Average Dispatch Times by Station (2015-2020)	109
Figure 11	Average Chute Times by Station	109
Figure 12	Average Travel Times by Station (2015-2020)	110
Figure 13	First Apparatus On-scene Times by Station (2015-2020)	110
Figure 14	Leslieville Station 10 – Total Times by Year	111
Figure 15	Condor Station 20 – Total Times by Year	111
Figure 16	Caroline Station 30 – Total Times by Year	112
Figure 17	Nordegg Station 50 – Total Times by Year	112
Figure 18	Rocky Mountain House Station 60 – Total Times by Year	113
Figure 19	Headquarters Response Time – Total Times by Year	113
Maps		
Map 1	Clearwater County Overview Map	8
Map 2	Rocky Mountain House Land Use	11
Map 3	Caroline Land Use	12
Map 4	Nordegg Land Use	13
Map 5	Station 10 – Leslieville Average Response Time	135
Map 6	Station 10 – Leslieville Theoretical Response Time	136
Map 7	Station 20 – Condor Average Response Time	137
Map 8	Station 20 – Condor Theoretical Response Time	138
Map 9	Station 30 – Caroline Average Suburban Response Time	139
Map 10	Station 30 – Caroline Average Rural Response Time	140

Item	Description	Page
Maps		
Map 11	Station 50 – Nordegg Average Rural Response Time	141
Map 12	Station 60 – Rocky Mountain House Average Response Time	142
Map 13	Station 60 – Rocky Mountain House Average Urban Response Time	143
Map 14	Station 60 – Rocky Mountain House Theoretical Response Time	144
Images		
Image 1	Risk Management Cycle	15
Image 2	CRFRS Command Structure (2020)	39
Image 3	Recommended CRFRS Organizational Structure (2020)	45
Image 4	Sample Emergency Services Dashboard	130
Tables		
Table 1	Targeted Interview List	4
Table 2	Average and Median Ages	11
Table 3	Risk Inventory (SAMPLE)	18
Table 4	Example of Basic Building Inventory by Property Type	20
Table 5	Residential Stock in CRFRS Fire Protection Area	21
Table 6	Example of Fire Risk Assessment by Property Type for a Demand Zone	22
Table 7	Schedule B. Service Types and Service Levels	58
Table 8	CRFRS Response from 2017 - 2019	59
Table 9	Structural and Vehicle Fires 2017-2020	60
Table 10	NFPA 1720 Standard for Fire Suppression Operations by Volunteer Fire Departments	67
Table 11	CRFRS Fire Prevention Services	70
Table 12	Fire Apparatus Service Schedule (Fire Insurance Grading)	83
Table 13	Participating Municipal Comparatives	97
Table 14	Participating Municipal Comparatives Department Profile	97
Table 15	Participating Municipal Comparatives Department Profile – Organizational Structure	98
Table 16	Participating Municipal Comparatives Budget Ranking	98
Table 17	Examples of Incident Types for Statistical Analysis	100
Table 18	Participating Municipal Comparatives Response Call Volume	101
Table 19	Summary of Call Types and Frequency by Station (2014-2019)	103
Table 20	Staffing and Response Time	104

Item	Description	Page
Tables		
Table 21	Intervention Time Defined	105
Table 22	Average Number of Firefighters Who Respond to the Station on Receipt of a Call	107
Table 23	Response Time and Firefighters On-Scene - NFPA vs Actual by Station (2019-2020)	108
Table 24	CRFRS Incident Types (2014-2020)	119
Table 25	CRFRS Average Response Time (2015)	127
Table 26	CRFRS Average Response Time (2016)	127
Table 27	CRFRS Average Response Time (2017)	128
Table 28	CRFRS Average Response Time (2018)	128
Table 29	CRFRS Average Response Time (2019)	129
Table 30	CRFRS Response Time (YTD)	129
Table 31	CRFRS Apparatus Optimum Staffing Capacity	145
Table 32	Low Risk (no exposures): Garbage, vehicle – private, grass, investigate (external), monitoring alarm (w/o confirmation)	146
Table 33	Low Risk (no exposures): Shed, detached garage	146
Table 34	Moderate Risk (with exposures): Grass/wildland	146
Table 35	Moderate Risk: Attached garage, single family residential (detached/duplex)	147
Table 36	High Risk: Commercial, industrial, strip mall, warehouse, mid-rise residential	147
Table 37	Moderate Risk: FMR Emergency, vehicle vs. pedestrian	147
Table 38	Moderate Risk: Motor vehicle crash (1-3 private vehicles)	148
Table 39	Moderate Risk: Surface water, swift water or ice rescue, animal rescue	148
Table 40	Low Risk: Carbon monoxide alarm, small spill cleanup, investigates smell, needle removal	148
Table 41	Moderate Risk: Small quantity (<20 ℓ) of known product (gasoline, anti-freeze), open space natural gas smell or odor from unknown source	148
Table 42	Special Risk: Quantities (between 20 and 75 ℓ) of known product (gasoline, anti-freeze), natural gas leak, indoor natural gas smell or odor	149
Table 43	High Risk: Large quantity (>75 ℓ) of known product, known hazardous product, unknown substance, large exposure, or train derailment	150
Pie Charts		
Pie Chart 1	Fire Service Time Management	40
Pie Chart 2	Leslieville Fire Station 10 Call Types (2014-2020)	122
Pie Chart 3	Condor Fire Station 20 Call Types (2014-2020)	122
Pie Chart 4	Caroline Fire Station 30 Call Types (2014-2020)	123

Item	Description	Page
Pie Charts		
Pie Chart 5	Nordegg Fire Station 50 Call Types (2014-2020)	123
Pie Chart 6	Rocky Mountain House Fire Station 60 Call Types (2014-2020)	124

APPENDIX 'C'
THEORETICAL RESPONSE MAPPING METHODOLOGY

Response travel times are directly influenced by station location and can be varied based upon a cost/risk analysis and the development of performance targets.

Base Data Layers Requested

- Hydrology
- Single Line Road/Transportation Network
- Railways
- Municipal Boundaries
- Parks
- Projection File
- Orthophoto (GeoTIFF, Mr.SID), if available
- Emergency Services Locations

Data Formats

- Preference of ESRI Shapefiles

Purpose of Files

A. Hydrology
   i. Identify needs for response to water locations (if dependent on a water response unit).
   ii. Can be identified and analyzed with the rail network to locate spill contaminations, as well as containment for overland flow & flooding to water spills.
   iii. Locations of bridge crossings which can convert to varying incidents, as MVC/MVA, spill contaminants, etc.
   iv. Assists in the definition of the map for locational awareness by others
   v. Completes the map

B. Single Line Road/Transportation Network
   i. Used to determine response times from emergency locations to determine a network based on road speeds.
   ii. Roads are created into a network for response

C. Railways
   i. Identified risk areas for impeding response time when crossing a roadway or proximity to municipal areas will also determine the response and apparatus used for a derailment response or other rail emergency or risks, such as chemical spill evacuations.

D. Municipal Boundaries
   i. Identifies the limits to response for mutual aid and responsibilities when overlaps occur within a response area. Also identifies sub areas for specific mapping and identification of municipal and regional response zones. Provides information for gap analysis for future state locations or refinement of locations.

E. Parks
   i. Identifies the potential risk areas due to accessibility issues for tracts of land, as well as constraints and opportunities for new locational analysis for or against new stations within a municipality. Ability to determine development of new locations due to proximity. Parks are identified as local, regional, provincial, and national.

F. Projection File
   i. To ensure that we have the same data set up as being used by the Municipality or Client, measurements (both distance and time) and spatial location are correct when determining analysis.

G. Orthophoto (GeoTIFF, Mr.SID), if available
   i. We typically do not use the ortho on the output maps, but the analysis sometimes needs clarification of what is on the ground and we use it to quickly ground truth locations and information needed prior to asking clients for clarification, or to substantiate clarification of an area.
   ii. Is a nice to have, yet hard to use, as it takes up a lot of memory/space and is difficult to ship/transfer.

H. Emergency Services Locations
   i. Identify the actual location rather than a theoretical location based on an address match to ensure that the data location is as correct as possible, and no mis-locations are identified on the initial running of the theoretical response times.
   ii. Locations may be moved from within a parcel to the front of the parcel whereby it touches the road network. Ensures the response from the station is captured. There are no corrections made to the movement of station to time, as it is typically within 50 metres.

Theoretical Response Zone

A. Assumptions
   i. Weather is average – no storms, rain, snow etc.
   ii. Roadway segments contain a node/junction at intersections
   - If not available, road network needs to be cleaned and fixed
   iii. Roadways need to sometimes extend beyond some municipalities
   iv. Emergency responders are trained on response vehicles
   v. Response vehicles are in good condition
   vi. Roads are dry and in good condition

vii. Left turns are not reduced by a time %

viii. Road speeds are provided by client, if not

- Road class table used to populate speeds based on road classification
- Road speeds are reduced from the posted sign, typically no more than 5%

ix. Traffic volume is average, there is no congestion or there is a free-flowing lane to be used

x. Rail crossings are free to cross and do not impede response

xi. Time of day is based on an average time from 9 am – 9 pm

xii. Opticoms (or similar product for traffic light manipulation) are present to allow for free moving response

xiii. Intersections of roads are not reduced (the roads are reduced from other project limits and averaged over time for generality of best fit)

xiv. School zones are not adjusted unless identified, then changes to road net are made

B. Response Time

i. Customized response based on Emergency Services Input

ii. Response time includes in 80% of all calls for service

- Total drive time along roads (determined above by road speeds) with:

iii. Variances are identified and are tweaked based on known data or other trends

C. Response Polygons

i. Identify general area of response from the outer most limits driven

ii. Also identify response zones for mutual aid

iii. Identify gaps in response

iv. Aid in the development of Fire Zones for response

v. Assist in the identification of new stations

- Also identifies needs to move stations to another location, as required

Additional Analysis

A. Out of Scope Analysis (needs further discussion with client)

i. Transition from project to operationally based

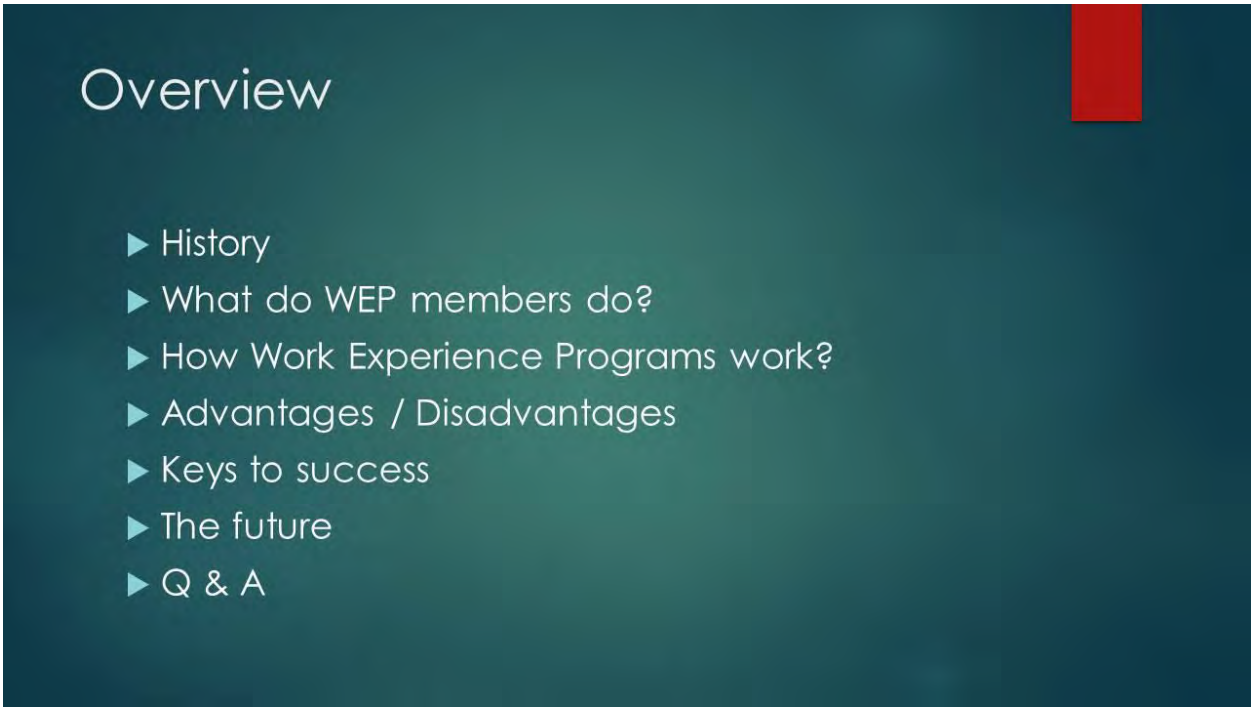
- Specific distance and travel
- Based on time of day
- Based on time of year
- Call volume
- Call types
- Modeling
- Scripting for batch work

B. Data Availability
   i. When data is available from clients is detailed enough, it is used
   ii. Not all data is detailed enough, and assumptions are made

C. Analysis
   i. Additional analysis can be performed (as reduction of road speeds to an intersection)
   - For above example, identification of intersections can be complex, and data not always available:
     - Stop Sign
     - Three Way Stop
     - Yield
     - Lights
     - Flashing Light

   ii. Tends to be time consuming
      a. Clients not willing to engage cost of this project
      b. Levels of data may not be accessible
      c. Missing detail
      d. Usually is a one-off project and new data is typically not leveraged

APPENDIX 'D'
WORK EXPERIENCE PROGRAM



Work Experience Programs -History Big White Fire

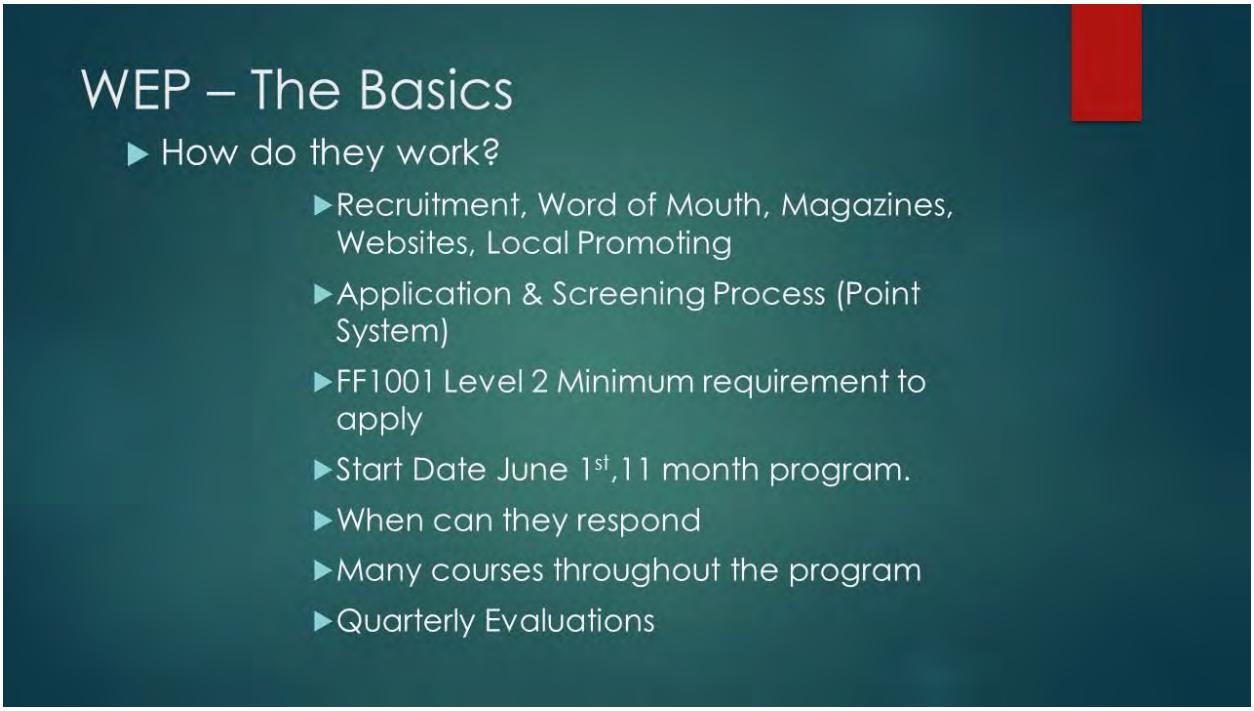
- The Evolution
  - Devise a Plan to Recruit and Retain Firefighters
  - Existing POC Crew Training Time (2 Years Average 1001 Level 2)
  - Methods of Recruiting well trained Fire Fighters
  - Where are we now?
    - Average over 60 Applicants for 7 positions
    - Program entering into its 17 year
    - 2013 First International Student
    - 97 FF since 2001- 72 Hired Career-13 POC
    - Our department is represented all over Canada

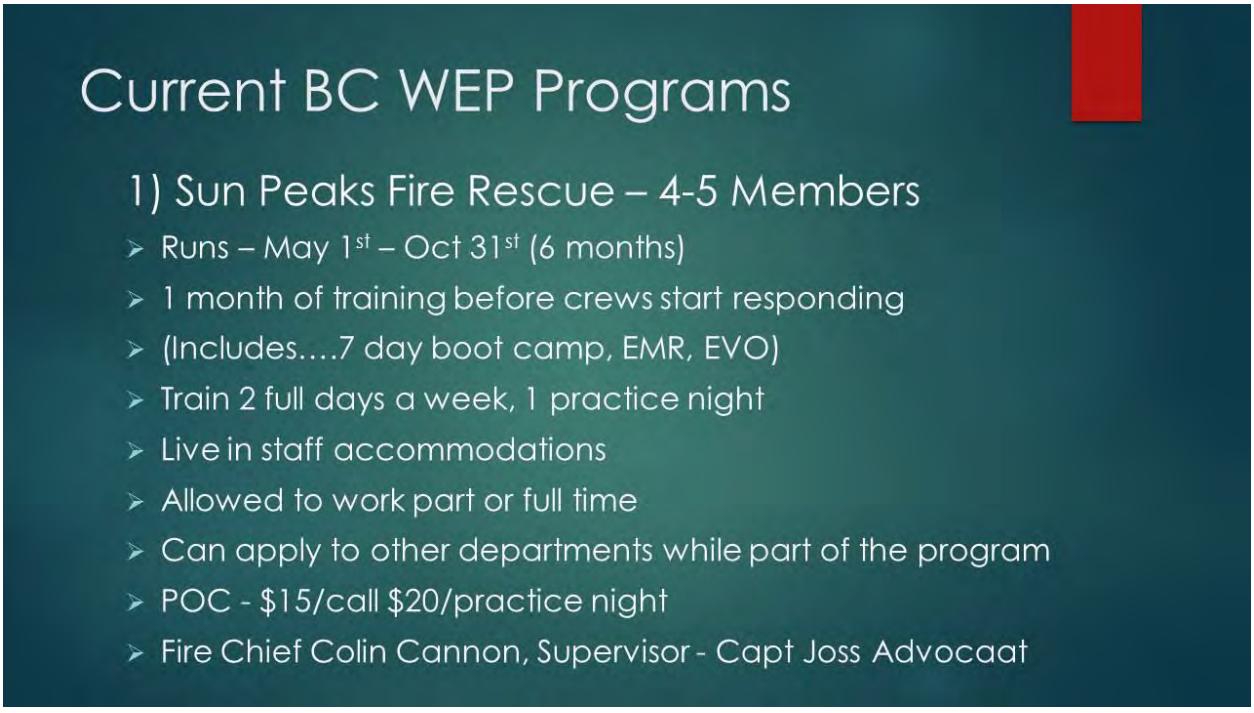
WEP – The Basics

- What do they do?

The work of a career fire fighter!

- Station duties
- Train
- Fire prevention
- Fire and life safety presentation
- Volunteer in the community
- Fundraisers
- Respond to calls outs
- They do it all with a strong work ethic and a great attitude


WEP – The Basics
How do they work?
Recruitment, Word of Mouth, Magazines, Websites, Local Promoting
Application & Screening Process (Point System)
FF1001 Level 2 Minimum requirement to apply
Start Date June 1st,11 month program.
When can they respond
Many courses throughout the program
Quarterly Evaluations


Current BC WEP Programs
1) Sun Peaks Fire Rescue – 4-5 Members
Runs – May 1st – Oct 31st (6 months)
1 month of training before crews start responding
(Includes….7 day boot camp, EMR, EVO)
Train 2 full days a week, 1 practice night
Live in staff accommodations
Allowed to work part or full time
Can apply to other departments while part of the program
POC - $15/call $20/practice night
Fire Chief Colin Cannon, Supervisor - Capt Joss Advocaat

Current BC WEP Programs

2) Merritt Fire Rescue Department – 5-6 members

- Ongoing (12 months)
- 4 week boot camp, fire, FR, Auto-Ex, Rope Rescue
- 6 training sessions a week (12 hours/wk)
- Live at the fire hall
- No part or full time work allowed
- Can apply to other departments while part of the program
- $3600 Ed Allowance/living exp, pass to the aquatic centre & gym, POC calls and training
- Fire Chief David Tomkinson, Supervisor – Lt. Carl Johnston

Current BC WEP Programs

3) Creston Fire Rescue – 5 members

- WEP Started fall of 2014
- Runs - Nov 1st – Oct 31st (12 months)
- 1 month of training before crews start responding
- Live at the fire hall
- No part or full time work opportunities
- Can apply to other departments while part of the program ?
- $2400 Ed Allowance, pass to the local rec centre, $100/mn janitorial, POC pay
- Fire Chief Mike Moore, Supervisor – Asst Chief Jared Riel

Current BC WEP Programs

4) Big White Fire Dept. – 7 members

- WEP Started 2001
- Runs - June 1st – Apr 15th (11 months)
- 1 month of training before crews start responding
- Live at the fire hall (1.3 million addition completed 2017)
- No part or full time work opportunities
- Can not apply to other departments while part of the program
- POC pay $18/hr 2 hr min, $18/hr 2 hr practice, Ski Pass
- Fire Chief Jamie Svendsen, Supervisor – DC Chris Cormack

WEP – The Basics (continued)

- How to start?
  - Why would you want to start a program
    - Staffing Requirements
    - Response Times
    - Truck and Equipment Maintenance
    - More Community Involvement
    - Increase POC membership
    - Increase Department moral
    - Increase Day Time Turnout

WEP – The Basics (continued)

- How much do they cost?
  - Big White 2017 Budget $35,000.00
  - 2017 Figures
    - Advertising and recruiting $300.00
    - Living Supplies $2,500.00
    - Uniform/Bunker Gear $8,700.00
    - Lunches/BBQ $1,500.00
    - Physical Fitness $3,000.00
    - Training Courses $8,000.00
    - Manuals/Office Supplies $700.00
    - Ski Passes $0.00 ($700 x 7)
    - Ride-a-Longs $1,500.00
    - Graduation Ceremonies $3.200.00
    - Electricity/Water/Sewer $3,200.00

WEP – The Basics (continued)

- Costs not reflected in previous slide
  - 60% of DFC Wages are spent running the Program
  - 20% Fire Chief Wages Admin/Training
  - 15% of DFC FPO are spent assisting with Training/Fire Prevention/Pub Ed
  - Some Training costs and wages absorbed in the Volunteer training and call out budget.
  - POC Wages
  - Most WEP see their cost as an extension of their education ($3,000 - $5,000 out of pocket)

Advantages

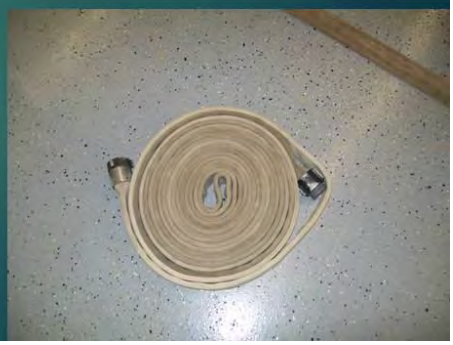
- The Obvious
  - More firefighters
  - More work
- Maybe not so Obvious…
  - Image
  - Culture

Disadvantages

- Amount of time to oversee program (7 FF 24/7 x 11 months)
- Living in close Proximity with each other for 11 months
- Takes them away from family, girlfriends, wife, for 11 months
- Leaving the program for interviews, fitness (CPAT) family matters
- Reference checks
- POC not making trucks, becoming complacent, lose interest
- DFC devoted to 4 months of training 4-5 days a week
- Wear and Tear on equipment
- You become a parent, assist with personnel matters, Life Long Mentors
- Little or no time off November to April

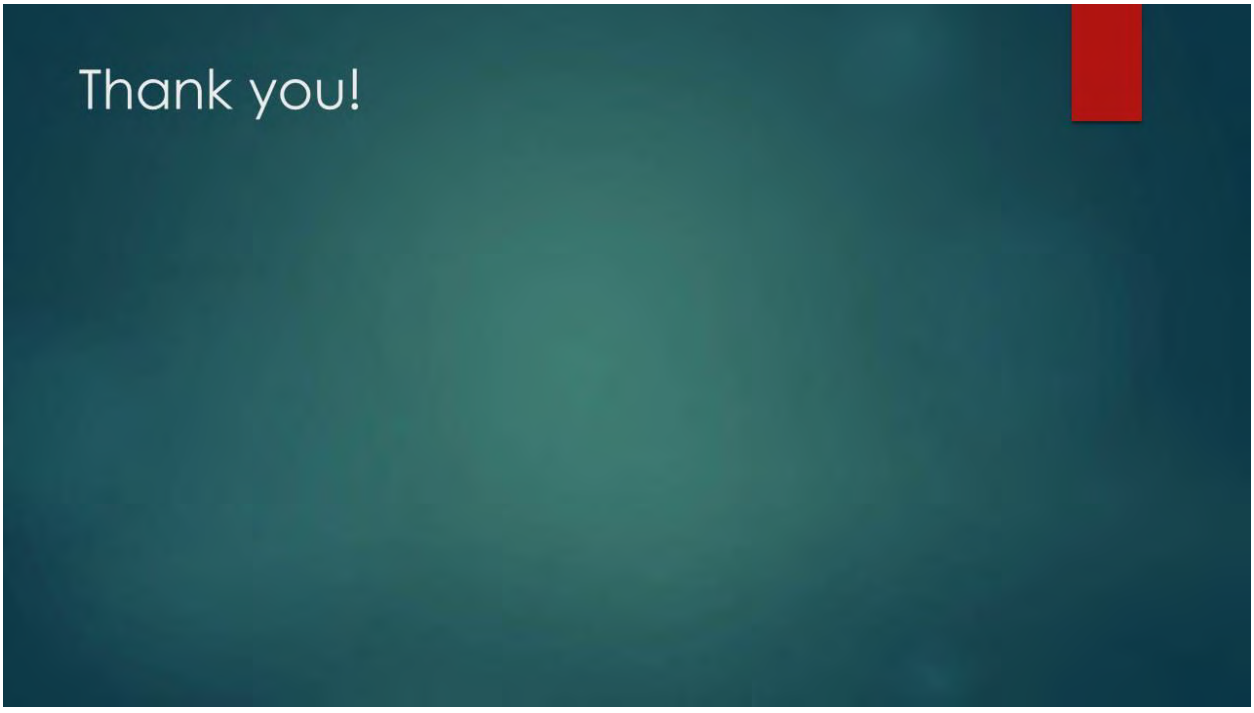
Key to Success

- Structure
- Feedback
- Training
- Inspiration



WEPs Future
-Where do we go from here?

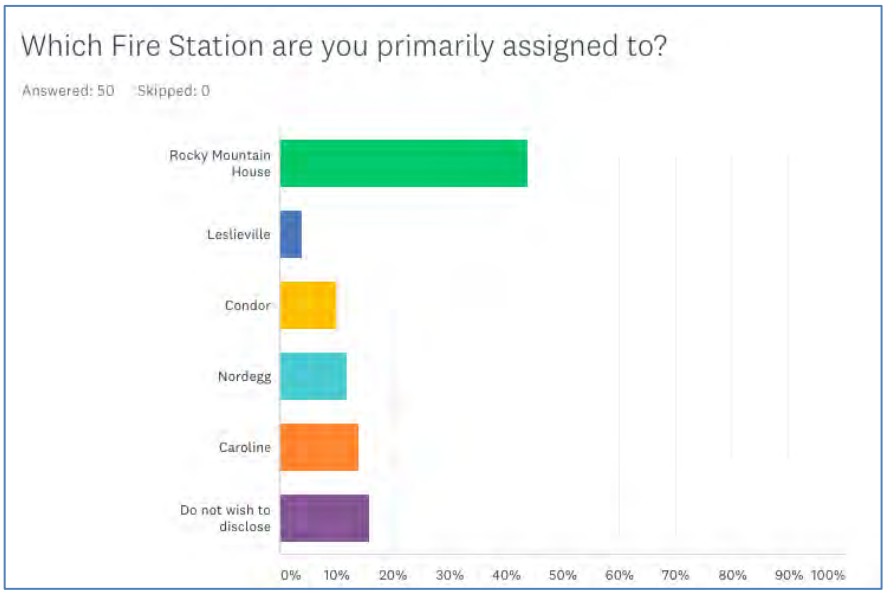
Q & A

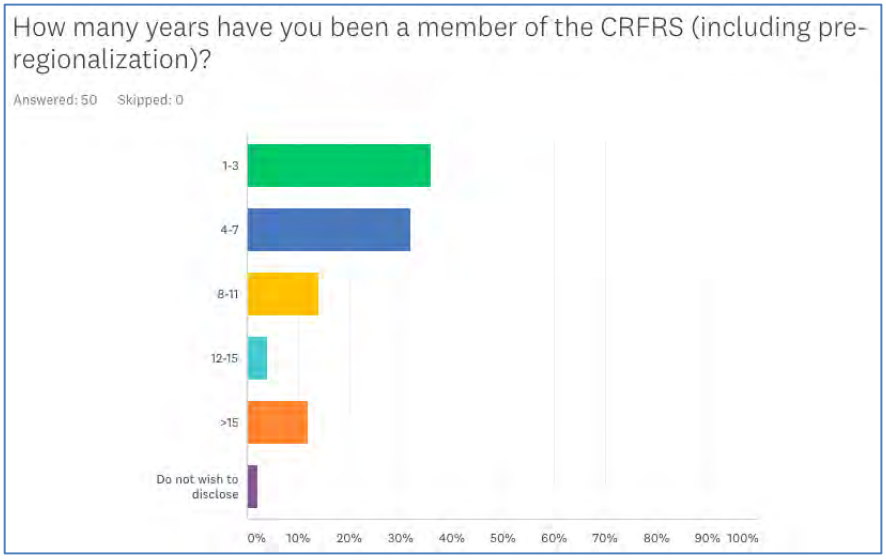

Thank you!

APPENDIX 'E'
CRFRS FIREFIGHTER SURVEY RESULTS

All CRFRS volunteer paid-on-call firefighters were offered the opportunity to participate in the survey provided by Behr Integrated Solutions. Of the 91 firefighters who were sent the survey link, 50 elected to respond. The statements offered in the survey reflected the questions asked to interview participants. Respondents were asked whether they agreed, disagreed or were uncertain whether they agreed or disagreed with each of the statements.

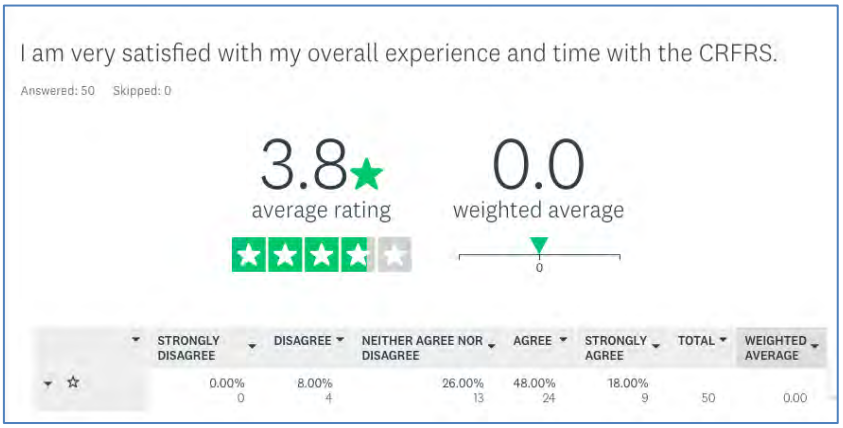
Demographics

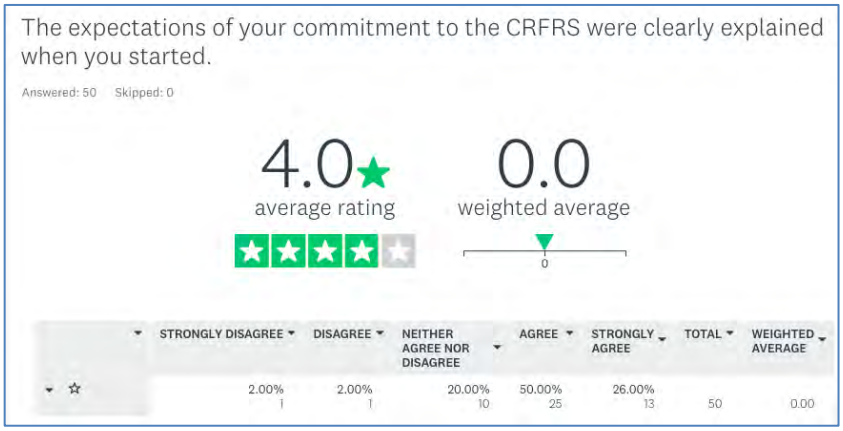


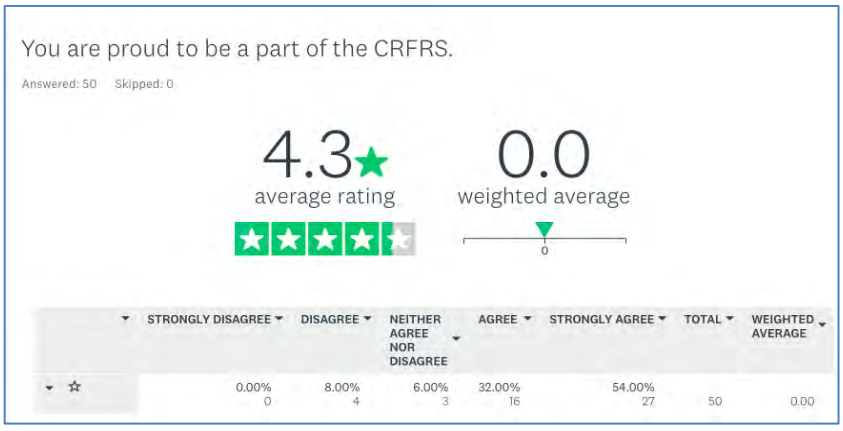


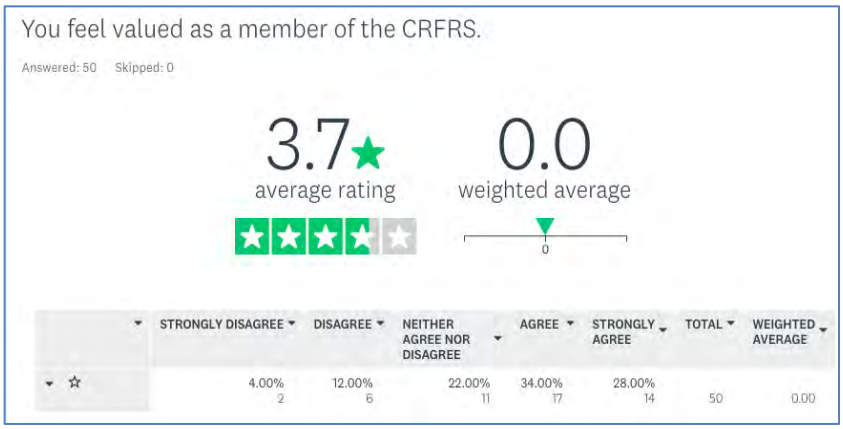
General Satisfaction

The following four statements regarded the overall satisfaction of being a member of CRFRS. Most respondents expressed a strong sense of pride in being a member and felt valued.



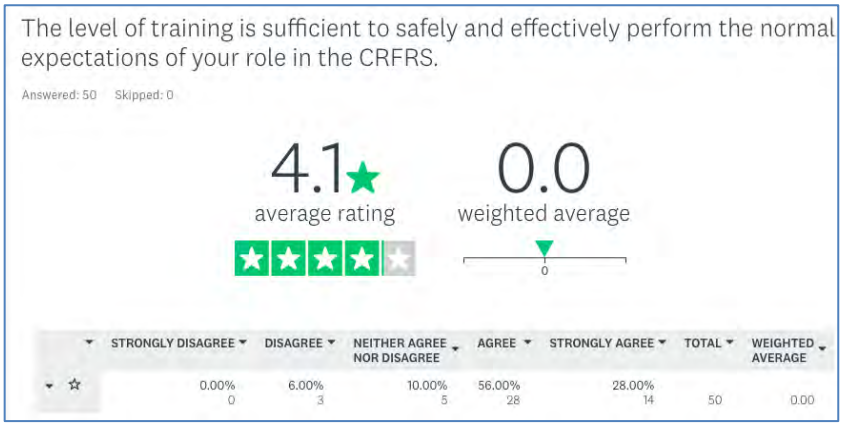






Training

The following four statements explored the topic of fire and rescue training. In general, the respondents agreed they were well trained to perform their duties. While some noted that it was a challenge to complete all required training, most suggested the comprehensive training requirements were more beneficial to their development than a burden. Additionally, most respondents agreed that recruit training was adequate. There were several comments regarding the need for a larger local fire training centre.



The level of training required has a negative effect on you personally. (life balance, home life, etc.)

Answered: 50 Skipped: 0

2.6★ average rating

0.0 weighted average

0

	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	12.00% 6	38.00% 19	32.00% 16	16.00% 8	2.00% 1	50	0.00

The current recruit training process is effective and meeting the needs of the service.

Answered: 50 Skipped: 0

3.5★ average rating

0.0 weighted average

0

	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	4.00% 2	12.00% 6	24.00% 12	46.00% 23	14.00% 7	50	0.00

CRFRS training facilities are effective and meeting the needs of the service.

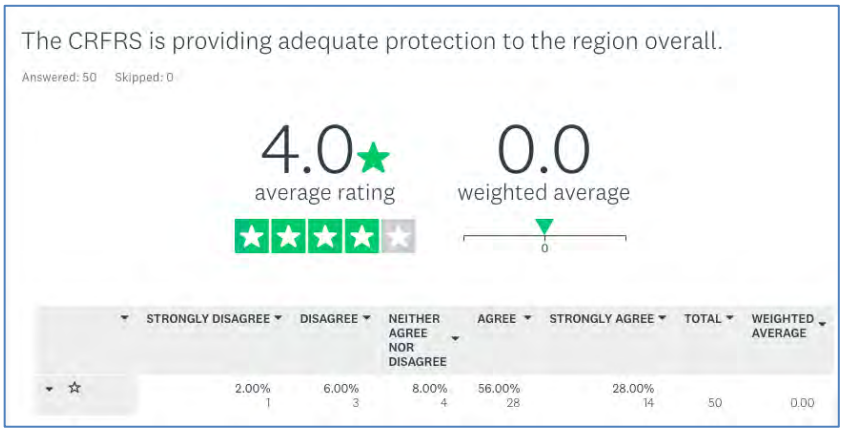
Answered: 50 Skipped: 0

3.1★ average rating

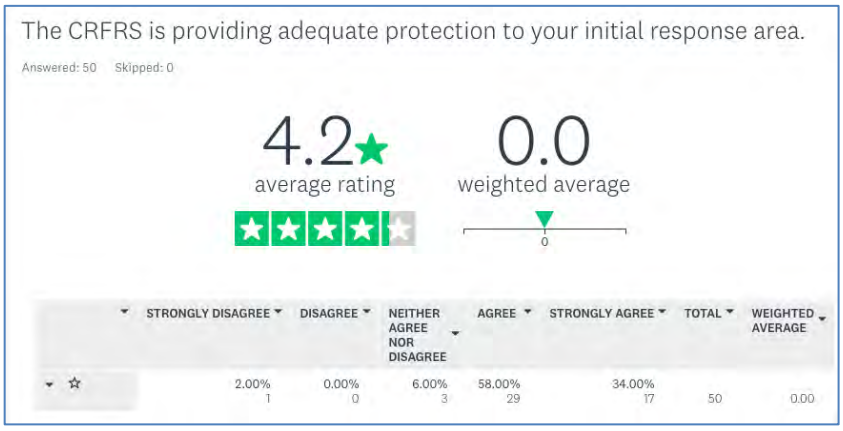
	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	10.00% 5	16.00% 8	34.00% 17	30.00% 15	10.00% 5	50	3.14

General CRFRS Performance

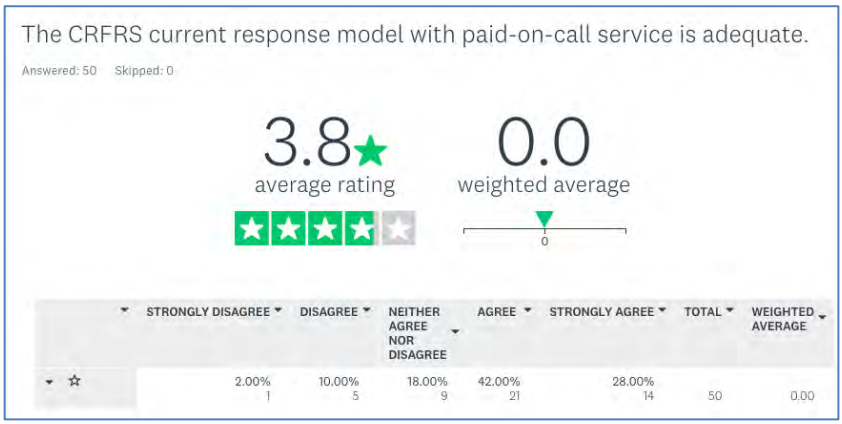
The following three statements considered the delivery of fire and rescue services. There was strong agreement across the respondents that the CRFRS provided good service and adequate protection across the County and in their local regions. However, several comments were made regarding the staffing shortfall and challenges in responding with adequate numbers of firefighters from Nordegg, Station 50.



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	2.00% 1	6.00% 3	8.00% 4	56.00% 28	28.00% 14	50	0.00



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	2.00% 1	0.00% 0	6.00% 3	58.00% 29	34.00% 17	50	0.00

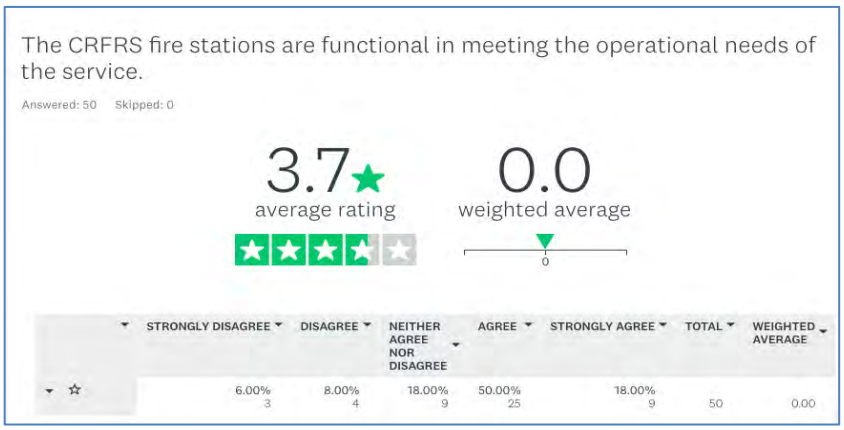


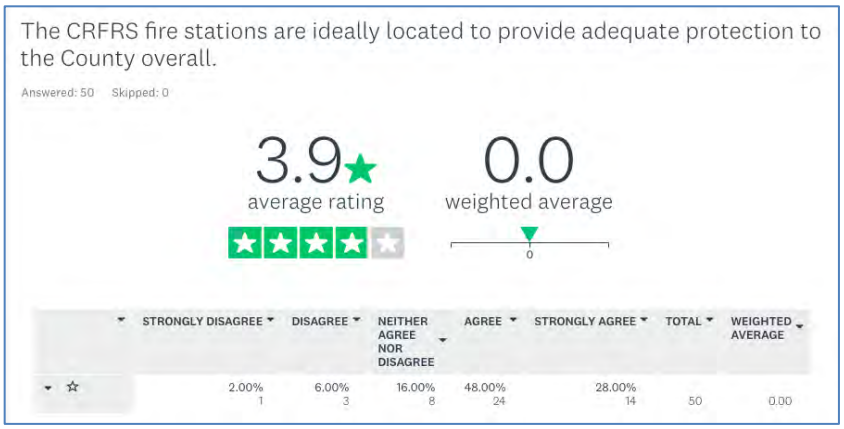
	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	2.00% 1	10.00% 5	18.00% 9	42.00% 21	28.00% 14	50	0.00

Facilities and Equipment

The following five statements considered the general state of facilities and equipment. Most respondents agreed that CRFRS is well equipped and for the most part. General themes expressed in the comments included that the CRFRS was a leader in purchasing good equipment, however the concern that the apparatus was too multifunctional and that too much was being expected from a single apparatus.

Respondents also suggest stations were functional and meeting their needs. There were specific concerns expressed regarding the size and state of Station 60 and the relative proximity of Station 20 and 30.





The CRFRS apparatus is functional and appropriate in meeting the operational needs of the service.

Answered: 50 Skipped: 0

3.7★ average rating

0.0 weighted average

	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	4.00% 2	4.00% 2	24.00% 12	50.00% 25	18.00% 9	50	0.00

The CRFRS equipment used is functional and appropriate in meeting the operational needs of the service.

Answered: 50 Skipped: 0

3.9★ average rating

0.0 weighted average

	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	2.00% 1	4.00% 2	10.00% 5	66.00% 33	18.00% 9	50	0.00

CRFRS equipment is maintained and tested appropriately.

Answered: 50 Skipped: 0

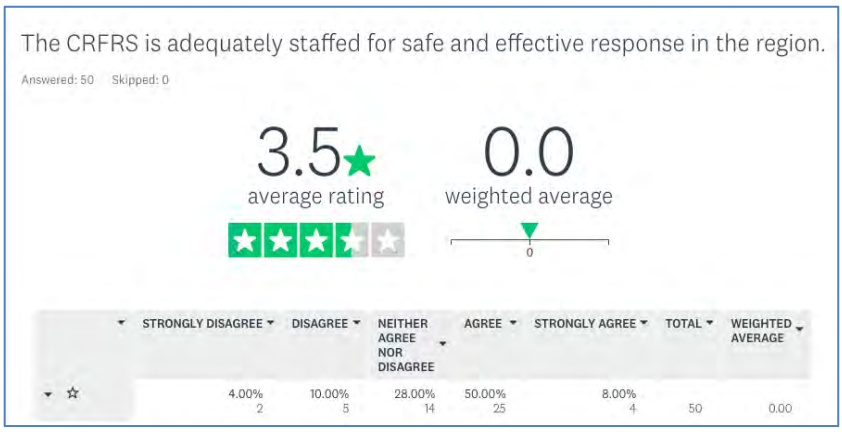
4.0★ average rating

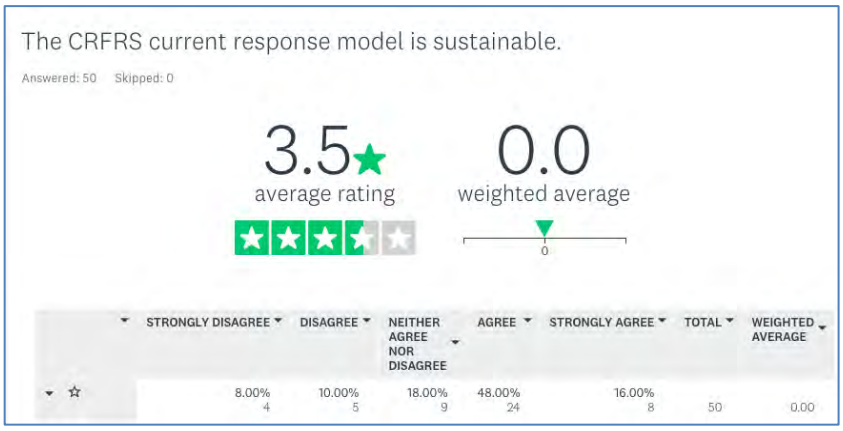
0.0 weighted average

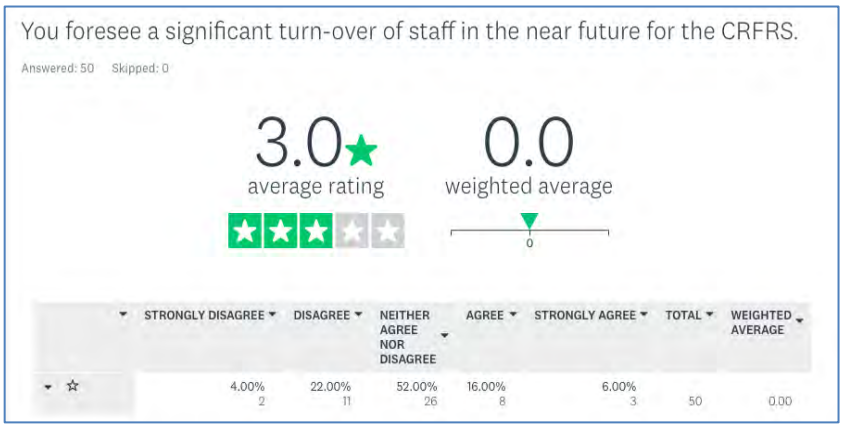
	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	4.00% 2	2.00% 1	10.00% 5	60.00% 30	24.00% 12	50	0.00

POC Staffing Model

The following three statements considered the notion of the CRFRS POC staffing model. In general, most of the respondents felt the POC staffing model was providing adequate response support and was sustainable. The respondents were less certain regarding the rate of staff turnover in the future. Further, several comments were made supporting the addition of full-time paid firefighter positions in the future.



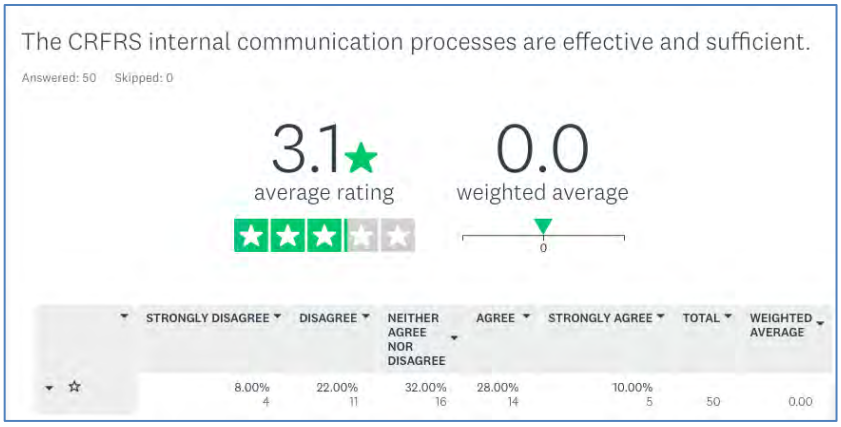




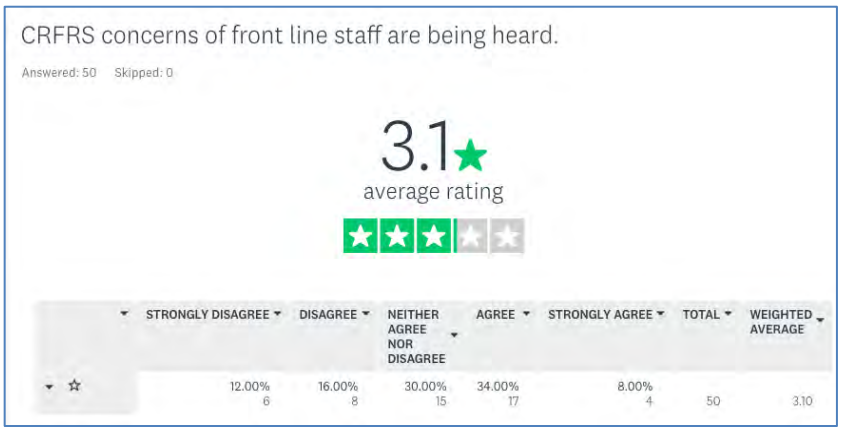
Communications and Engagement

The following six statements considered the topics of internal communication and engagement processes. A slight majority of respondents agreed that current communication was adequate, and the concerns of firefighters was heard by chief officers. However, several comments suggested that issues were slow to be acted upon. The majority felt the chain of command was appropriate and largely followed.

While a degree of support for committees and their value was expressed, most of the comments suggested they were not effective. There were several reasons cited for the generally negative perspectives on committees, but the main theme was that committee decisions were not final and being implemented.



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	8.00% 4	22.00% 11	32.00% 16	28.00% 14	10.00% 5	50	0.00



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	12.00% 6	16.00% 8	30.00% 15	34.00% 17	8.00% 4	50	3.10

The CRFRS chain of command is the most appropriate method of having issues or concerns addressed.

Answered: 50 Skipped: 0

3.5★ average rating

0.0 weighted average

0

	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	6.00% 3	8.00% 4	28.00% 14	48.00% 24	10.00% 5	50	0.00

The CRFRS chain of command regarding communications is being followed.

Answered: 50 Skipped: 0

3.2★ average rating

	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	8.00% 4	14.00% 7	34.00% 17	40.00% 20	4.00% 2	50	3.18

The CRFRS committees are effective.

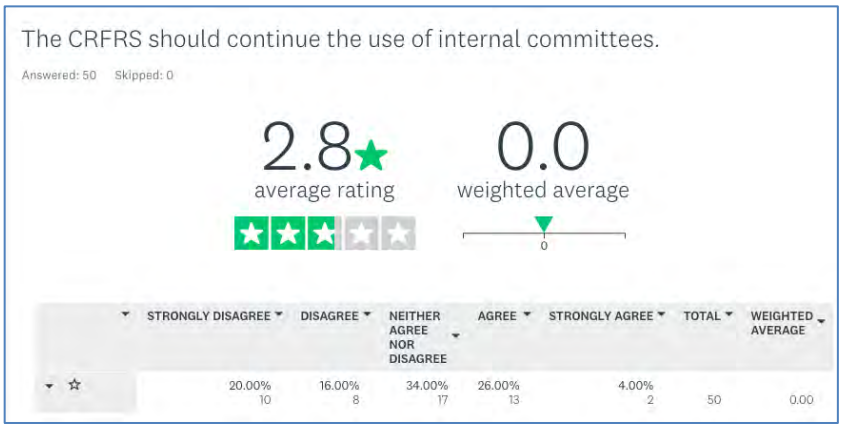
Answered: 50 Skipped: 0

2.3★ average rating

0.0 weighted average

0

	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	36.00% 18	20.00% 10	24.00% 12	16.00% 8	4.00% 2	50	0.00



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	20.00% 10	16.00% 8	34.00% 17	26.00% 13	4.00% 2	50	0.00

APPENDIX 'F'
CRFRS APPARATUS AND LIGHT DUTY VEHICLE INVENTORY REPLACEMENT PLAN

00 Units (100,300,500,600 - Light Brush - Primary Use: Grass Fires/Wildland Secondary Use: Drone Search/Water Rescue/Power Line Down. Pull trailers to be of true brush truck in nature, 4x4 extended cab, super single tire, winches, gas/diesel, will be equipped with skid similar to current 600 - 300 gallon water tank, foam tank, pump, 1" booster reel, 2000" of 1.5" forestry hose, 500" of 1" forestry hose, 500' of Econo hose, hand tools, wajax bags, power say, Mk3. suction.

05 Units (201) - WUI Engine - Primary Use: Structure/Brush/Grass/Wildland/MVC/Oil & Gas Well/Pipeline/Powerline Down/Alarms/Odor Complaint. Secondary Use: MVC/Heavy MVC/Domestic Rescue/Ice/ Water Rescue/Technical Rope Rescue/Farm/Industrial Emergency/ Confined Space/Dangerous Goods (Transport)/Fuel Spill/MFR. Similar to current 513 (custom if possible)/Timberwolf style, 4x4, rated 1250 pump, pump and roll, Type 1 Engine Pkg - ladders, SCBA, Spare SCBA bottles, hose bed and pre-connects, firefighting tools, Wajax, bumper turret, ground sweep nozzles, scene lighting,

02Units (102,202,302,502,602) - Tenders - Primary Use: Structure Fire/Brush/Grass/ Wildland/MVC/Oil & Gas Pipeline. Secondary Use: MVC/ Heavy MVC's/Dangerous Goods (Transport)/Alarms.

Discussed both large 10/20/50 and Small 30/60, Rated 1250 pumps, Porta tank, Portable pump, Large diameter Discharges, hard suction, roof ladder, fittings and adapters, hose beds for pre-connects, booster reel, small generator with light, scene lighting, pfd's, hand auger

03 Units (103,203) - Rescues 20/60 - Primary Use: MVC/Heavy MVC's/ Domestic/Drone/Ice/Water/Technical Roper/Farm/ Industrial Emergency/Power Lines Down/Confined Space/ MFR/Dangerous Goods (Transport)/Odor Complaint/Alarms/ Fuel Spill. Secondary Use: Structure Fire/Brush/Grass/ Wildland/MVC's.

Special Rescue, no pump, no tank, custom cabs, single axle, SCBA, SCBA bottles, scene lighting, on board generator (built in), awnings, winches, anchor points all sides, ladders, cascade, rescue tools, jaws - line cutter spreader, struts stabilization equipment, airbags, chainsaw/vent saw, k12 saw, jacks.

13 Units (313,513,613) - Rescue Pump 30/50 - Primary Use: Structure Fire/Brush/ Grass/ Wildland/MVC/MVC Heavy/ Domestic/Drone/Ice/Water Rescue/Technical Rope/Farm/Industrial Emergency/Powerline Down/Confined Space/MFR/Dangerous Goods (Transport)/Odor Complaint/Alarms/Fuel Spill.

Similar to 513/613, Type 1 Engine Package, Rated 1250 Pump, SCBA, SCBA bottles, Rescue Tools - jaws - line tools, airbags, struts, stabilization, Honda generator, scene lighting, hand tools, ladders.

01 Units (101, 601)- Pumper Tanker - Primary Use: Structure / Brush / Grass / Wildland / MVC / Oil & Gas Well/ Pipeline / Powerline Down / Alarms, Secondary Use: MCV / heavy MVC / Domestic Rescue / Ice Rescue / Water Rescue / Technical Rope Rescue / Farm / Industrial Emergency / Confined Space / Dangerous Goods (Transport) / Odor Complaint / Fuel Spill/. Similar to 601, Type 1 Engine Package, Rescue Tools - Edraulics, vent saw, scene lighting, rear intake, rear dump chute, porta tank, ladders, SCBA, SCBA bottles, booster reel, custom/commercial.

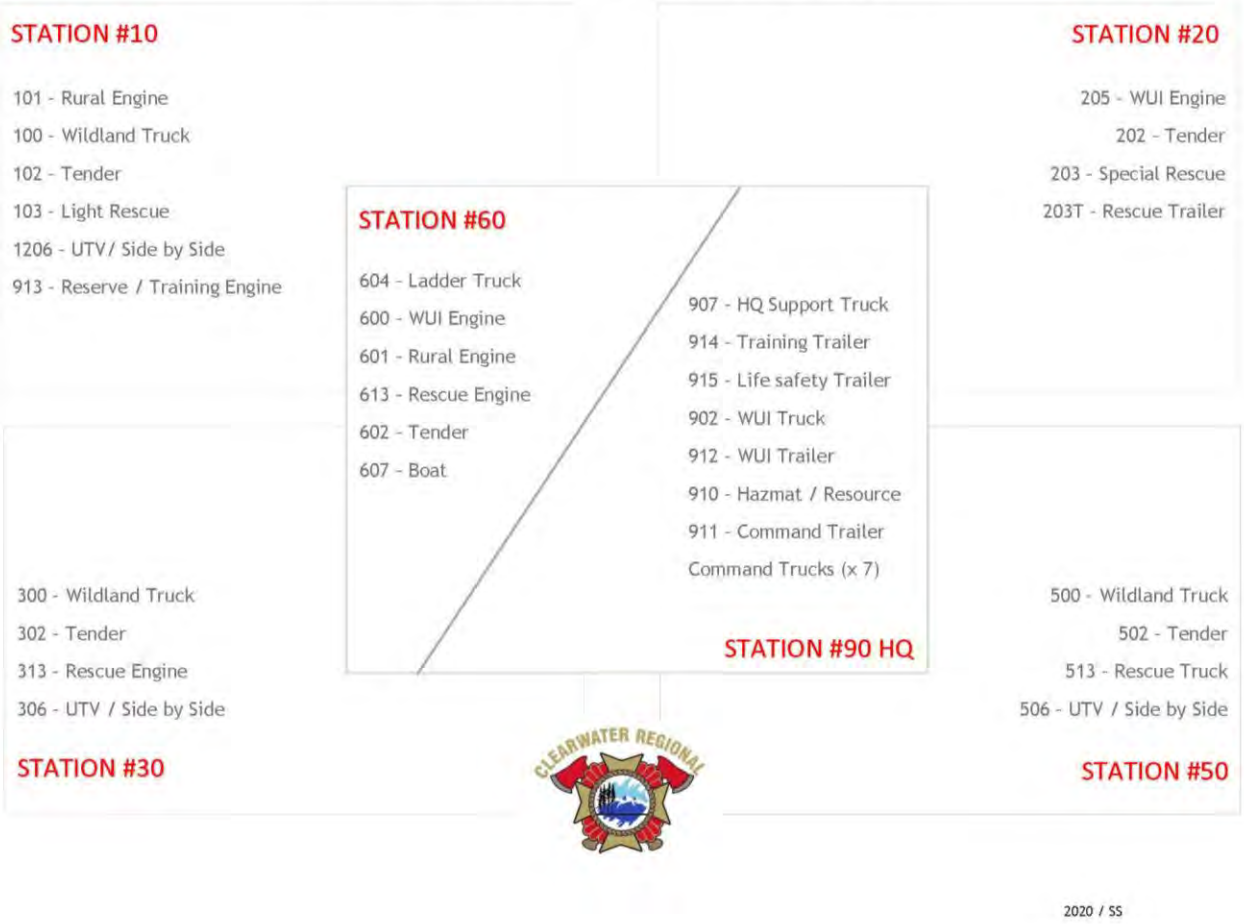
04 Units - Structure Fire / Special Rescue - Primary Use: Structure/Alarms. Secondary Use: Oil/Gas/Pipeline/Farm Rescue/Domestic Rescue/Technical Rope Rescue/Farm/Industrial Emergency/Odor Complaint.

06 Units (1206,306,506) - Grass Fires / Back Country Rescue -

07 Units (607)- Water Rescue -

900 Units (900,901,902,903,904,906,908) HQ - Command Truck/Pull Trailers

CLEARWATER REGIONAL FIRE RESCUE SERVICES - STATION UNITS



Clearwater Regional Fire Rescue Services	BUDGET	10-Year Capital Projections										
FINAL - Approved by ICC 10.22.2020	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	10 YEAR Total
604 Aerial (Rocky)			180,000	1,620,000								1,800,000
103 Light Rescue (Leslieville)				45,000	405,000							450,000
203 Rescue (Condor)				70,000	630,000							700,000
313 Rescue / Pump (Caroline) - Replaces 301 & 303	575,000											-
513 Rescue / Pump (Nordegg)								75,000	675,000			750,000
101 Engine (Leslieville)	535,000											-
102 Tender (Caroline)	443,000											-
202 Tender (Condor)						55,000	495,000					550,000
302 Tender (Caroline)			56,100	504,900								561,000
502 Tender (Nordegg									56,100	504,900		561,000
602 Tender (Rocky)		56,100	504,900									561,000
100 Light Brush Truck (Leslieville)										40,000	360,000	400,000
200 Certified Brush Engine (Condor) - Replaces 201	525,000											-
300 Light Brush Truck (Caroline)							40,000	360,000				400,000
500 Light Brush Truck (Nordegg)	40,000	340,000										340,000
600 Certified Brush Engine (Rocky)			65,000	555,000								620,000
900 Command Unit						90,000						90,000
901 Command Unit - Deferred to 2022 Replacement			90,000							90,000		180,000
902 Command Unit - 2021 Replacement		90,000							90,000			180,000
903 Command Unit				90,000							90,000	180,000
904 Command Unit - Deferred to 2021 Replacement		90,000							90,000			90,000
906 Command Unit - 2020 Replacement	92,632							90,000				90,000
908 Command Unit - 2020 Replacement	92,632							90,000				90,000
206 UTV (Condor)								45,000				45,000
306 UTV (Caroline)											45,000	45,000
506 UTV (Nordegg)								45,000				45,000
606 UTV (New) (Rocky)					45,000							45,000
306T UTV Trailer (Caroline)	20,000											-
506T UTV Trailer (Nordegg)		30,000										30,000
606T UTV Trailer (Rocky)					20,000							20,000
912 WUI Trailer (HQ)					20,000							20,000
Safety House (HQ)							400,000					400,000
P25 AFFRCS Radios	100,000											-
BA Compressors	35,000										40,000	40,000
SCBA	90,000	66,000	66,000	55,000								121,000
Hydraulic Tools Set	46,000	46,000		50,000								142,000
General (i.e. pressure washers, pumps)	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	250,000
Total Fire Rescue	**2,619,264**	**743,100**	**987,000**	**3,014,900**	**1,145,000**	**170,000**	**960,000**	**730,000**	**936,100**	**659,900**	**560,000**	**9,796,000**