Parkland County

FIRE SERVICES MASTER PLAN

Final Report

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Preface

This document serves as the Parkland County's Fire Service Master Plan. The primary motivation for developing this document is to establish a long-term strategy for the community that protects life and property based on local risk, safety, corporate priorities, and Council-approved budget allocations. This document will be used as a tool to evaluate and forecast the 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 Brian Cornforth. While there are some challenges for Parkland County, Chief Cornforth remains positive in his efforts to enhance the department and public safety for the community and its citizens. The fire services' leadership and firefighters are dedicated and engaged in all facets of their community. Their pride in the department and their service is clear.

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PARKLAND COUNTY FIRE SERVICES

ACRONYMS

Acronym	Definition	Acronym	Definition
ABC	Alberta Building Code	NFPA	National Fire Protection Associations
AEMA	Alberta Emergency Management Agency	NG911	Next Generation 911
AOHS	Alberta Occupational Health and Safety	NIST	National Institute of Standards and Technology
CFAI	Commission of Fire Accreditation International	MVI	Motor Vehicle Incidents
CRA	Community Risk Assessment	OHS	Occupational Health & Safety
CSA	Canadian Standards Association	MDS	Minimum Duty Strength
EMS	Emergency Medical Services	POC	Paid On-Call
ERF	Effective Response Force	PPE	Personal Protective Equipment
EVT	Emergency Vehicle Technician	PSAP	Public Safety Answering Point
FF	Firefighter	PT	Part-time
FSMP	Fire Services Master Plan	QMP	Quality Management Plan
FT	Full-time	RMS	Records Management System
FTE	Fulltime Equivalent	SCO	Safety Codes Officer
FUS	Fire Underwriters Survey	SOC	Standards of Cover
GPM	Gallons per Minute	SOG	Standard Operating Guidelines
IAFF	International Association of Fire Fighters	SOP	Standard Operating Procedures
IAP	Incident Action Plan	UNDRR	United Nations Office for Disaster Risk Reduction
KPI	Key Performance Indicators	WCB	Workers' Compensation Board
KSA	Knowledge, Skills, Abilities	WUI	Wildland Urban Interface
NBC	National Building Code of Canada		

TABLE OF CONTENTS

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 emergency management services has expanded, causing the role to shift and a need to diversify. Effective management of an emergency services department requires a clear understanding of risk and the ability to provide an appropriate response to mitigate the risks. Failing to realize and address these challenges could leave the community and its responders vulnerable.

Modern fire, rescue and emergency services have evolved into a critical component of a community's social safety net. Whereas early fire departments were established specifically to combat structure fires that, at the time, were often devastating. Today's fire departments are also called upon to respond to medical emergencies, rescues of all sorts, motor vehicle incidents, dangerous goods releases, wildland fires and natural disasters, etc. As a result, fire departments must be adequately resourced and equipped to provide these services safely, efficiently, effectively with a great deal of competency.

Elected officials, chief administrative officers, directors, general managers, managers, and fire chiefs are often faced with the ongoing challenge of achieving efficient and effective service delivery models. Public safety is most often one of the top priorities within most communities, but achieving this goal comes at a relatively high cost. The services charged with achieving this outcome, including Police, Fire, EMS, and Emergency Management services, are essential components of the public safety services. Service effectiveness is not an option. However, the need to be fiscally responsible and to review operational efficiency and effectiveness cannot be ignored. Senior community officials must continue to be vigilant in their search for innovative and sustainable practices and finding the balance between service levels and expenditures to ensure their citizens are getting *'Value for Money'*.

The goal of developing a Fire Services Master Plan is to provide strategic direction for the fire service. The Fire Service Master Plan will provide a systematic and comprehensive approach to evaluate current response capabilities by identifying and mitigating risks and assist in formulating and communicating strategic directions for the fire service, while highlighting opportunities for improved service delivery. This Fire Service Master Plan will also assist in conveying information to the public, staff, and municipal Council about what to expect in the municipality's approach to fire and emergency service planning, service delivery model, policy, and development.

The outcomes derived from this project identifies recommendations and options towards an optimum service delivery model and serves as a blueprint for the Parkland County Fire Services to be more effective and efficient in the delivery of emergency services through current and future challenges.

Strategic Goals

The information and outcomes from analyzing community risks and identifying service gaps was used to inform the development of fire and emergency services in Parkland County. Recommendations are presented to mitigate and overcome perceived risks and guide the directions of PCFS.

This Fire Service Master Plan utilized information in the 2025 Community Risk Assessment to identify the fire safety risks within the County to inform the development of goals and objectives for the delivery of fire protection and emergency response services. Optimizing the methodology of the three lines of defense - Public Education, Fire Prevention and Code Enforcement, and Emergency Response will allow PCFS to provide a comprehensive fire protection program.

Project Approach and Outcomes

While risks are the basis for triggering response decisions, our analysis has also investigated the overall needs of the community and will provide a point of reference upon which future decisions and priorities can be evaluated and implemented. This includes identifying priorities, challenges, and opportunities for the improvement of the delivery of emergency services. Along with risks, this plan also, considers applicable legislation, industry-leading and best practices, and standards to provide unbiased analysis and evidence-based recommendations.

Key aspects in the development of this plan included a community wide tour that focused on the overall footprint, topography, and transportation infrastructure of the community along with the various response districts. This tour included a visit to each of the four PCFS fire stations. Touring these stations also provided an opportunity to conduct a general condition and operational functionality assessment of each facility.

Targeted interviews and an online survey were also conducted to collect valuable input and information. This process was used to promote an open discussion about the community, risks, general concerns related to the community and municipal operations.

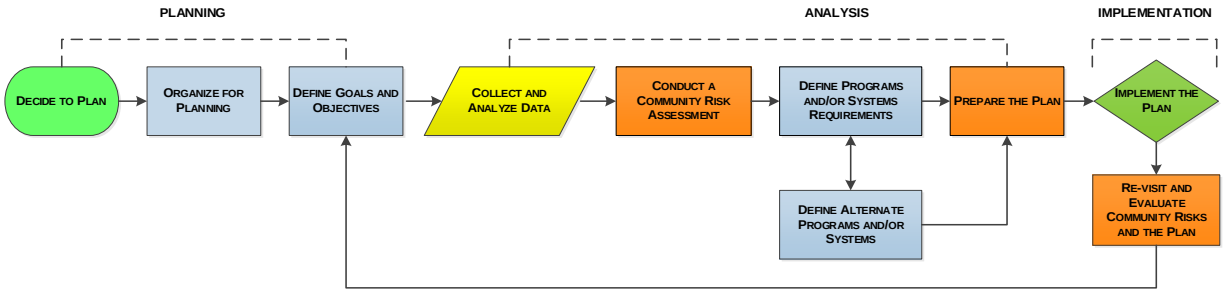
An industry peer municipal comparative analysis[1] of the fire service was also conducted as a method of benchmarking the performance of departments to similar municipalities. These benchmarks include budgets, performance, effectiveness, and efficiencies. Although fire and emergency services ultimately have the same goal of protecting life, property and the environment, each community has its unique features in how to accomplish their goals. Our main criteria for the comparative analysis are indicators of effectiveness and efficiencies amongst the communities for risk and mitigation.

Fire Services Master Plan Process

A Fire Service Master Plan is sometimes referred to as a 'road map' for the future and used as a guiding document for current and future department leaders and decision makers. The following diagram illustrates the process used to complete this plan.

As described in the implementation phase, it is highly recommended that this plan be reviewed and evaluated, at minimum, on an annual basis or when there are unusual changes, such as in population, and residential and/or industrial development activity that could affect changes in risk. When reasonably possible, we also recommend a third-party update of the plan at the five-year mark to apply an unbiased review into the operation and provide further credibility to the master plan process.

Fire Services Master Plan Process



Community Risk Assessment

Every municipality has unique challenges and characteristics contributing to the overall risk profile of the community. An evaluation of potential risks and vulnerabilities within a specific community is a vital process designed to identify, assess, and prioritize various risks, such as natural disasters, industrial accidents, public health emergencies, and other hazards that impact the safety and well-being of the community residents. A Community Risk Assessment (CRA) was conducted by Behr Integrated and is presented in a separate report.

[1] *Please see Section 1.7 Municipal Comparative Analysis, Page 7*

A Community Risk Assessment (CRA) is a comprehensive evaluation of potential risks and vulnerabilities within a specific community. It is a vital process designed to identify, assess, and prioritize various risks, such as natural disasters, industrial accidents, public health emergencies, and other hazards that impact the safety and well-being of the community.

Community Risk Assessments allow fire departments to make informed decisions about the types and levels of fire protection services provided based on identified risks. Specifically, the following nine (9) profiles will be reviewed:

1. Geographic profile
2. Building stock profile
3. Critical infrastructure profile
4. Demographic profile
5. Hazard profile
6. Public safety response profile
7. Community services profile
8. Economic profile
9. Past loss and event history profile

Risks can be managed by either 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.

Risks were identified using historical response data, the community emergency management program risk assessment, and information from our interviews to develop a risk profile for the community. The evaluation of fire and 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.

Parkland County faces a diverse range of moderate to high risks driven by its geography, infrastructure, building stock, demographics, and historical emergency data. Key concerns include:

- Transportation-related incidents such as motor vehicle collisions, hazardous goods transport on highways and railways, and the risk of train derailments.
- Residential fire risk is elevated due to a high proportion of older buildings and growing urban development, while emerging construction materials and industrial operations contribute additional fire load and safety challenges.
- Critical infrastructure vulnerabilities, particularly around firefighting water supply and the Trans Mountain Pipeline, pose operational risks.
- Demographic shifts, including a growing and aging population, signal increased service demand and heightened fire safety concerns.
- Historic data highlights persistent issues with smoke alarm reliability and a rising trend in emergency call volume.
- The risk of wildfire stems from a mixture of climatic factors, abundant combustible vegetation, and the widespread presence of wildland-urban interface zones.

In addition to the overall highest risks to the community, certain events pose an increased risk specific to firefighting. To better understand the risks of hazards as they pertain to fire protection services, the hazards have been assessed within the community risk assessment to identify possible impacts on fire protection services. Many of the potential impacts are not unique to a jurisdiction. The results of this review as they pertain to the top hazards in the community are the same as listed above.

Community Overview

Located in central Alberta, just west of Edmonton, Parkland County is a community that has a blend of progressive planning, economic development, and natural landscapes. Its landscape consists of scenic lakes, lush farmland, and well-preserved green areas. Located in the western half of the county is Wabamun Lake; a popular spot for outdoor enthusiasts who appreciate hiking, cycling, and water sports.

With a population of approximately 33,537 (2023), the County has seen steady growth in recent years. Its economy is diverse, driven by industries such as power generation, forestry, oil and gas, advanced manufacturing, transportation, and agriculture.

Parkland County is a rural community with a vision of a thriving future. This vision is set through the County's Municipal Development Plan (MDP). The MDP is a high-level plan that guides the County's growth by setting the direction for residential, industrial, and recreational development for the next 30 years. The MDP contains policies for future land use, infrastructure and transportation requirements, and areas for environmental protection.

Stakeholder Engagement and Consultation

Three key aspects in the consultation in the development of the Fire Services Master Plan included a community and station tour, targeted interviews, and an online firefighter survey. The community tour focused on the overall footprint, topography, transportation infrastructure of the municipality and the various response districts for the current fire service station.

Targeted interviews were an important part of the data and information collection process. Participants were asked questions related to their areas of responsibilities and expertise. An interview guide was used to conduct the interviews. The interview itself was used to promote an open discussion about the community, risks, general concerns related to the community and municipal operations. Additionally, we met with representatives from the three contracted services partner communities of Town of Devon, Town of Stony Plain, and Yellowhead County along with two members from the Acheson Business Association (Genics Inc. and Energera Inc.) to determine their level of interaction and satisfaction with the Parkland County Fire Services. (See Table 1- Targeted Interview List, Page 5).

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.

Community Comparative Analysis

An industry peer comparative analysis[2] of the Parkland County Fire Services' operations was also conducted as a method of benchmarking the performance of departments to similar municipalities. 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 indicators of effectiveness and efficiencies amongst the communities for risk and mitigation.

The communities who participated, along with the Parkland County, included:

- Rocky View County
- Sturgeon County
- County of Leduc
- Foothills County
- Red Deer County
- County of Grande Prairie

For the budget year of 2024, the seven services surveyed have operating budgets within the range of $2.6M to $15.6M annually. From highest to the lowest, PCFS ranks 5th among municipalities surveyed, 5th for cost per capita, and is ranked 2nd for the percentage of municipal budget.

It is noted that Parkland is the only department operating a fire dispatch centre and will result in increased additional budget costs that the others would not experience. Combined all the results Parkland County is considered on the lower side of most rankings but does not indicate any major concerns in comparison with the other departments. For the purposes of this report dispatch services and emergency management were not included.

There is no standard for categorizing incidents so it must be understood that these statistics are broadly based and are only general reference when comparing fire departments. The community comparative analysis can only be interpreted from an indirect basic level due the disparity from each of the surveyed communities' organizational structure, core services and levels, emergency response categorization, and financial systems. Direct comparison is strongly discouraged.

[2] *Please see Section 1.7, Community Comparative Analysis, Page 7*

Department Overview

PCFS currently operates under the Parkland County Bylaw 2023-17, "*A Bylaw to Establish and Operate a Fire Department, the Prevention and Control of Fires, and Authorize the Recovery of Related Fees, Expenses and Charges*". Bylaw 2023-17 authorizes PCFS and contracted fire services to provide:

- Preventing and extinguishing fires.
- Investigating the cause of fires in accordance with the quality management plan approved by Council and the Safety Codes Council.
- Preserving life, property, and the environment, and protecting persons and property from injury or destruction by fire.
- Providing rescue services and medical first response
- Carrying out pre-fire planning and fire inspections in accordance with the quality management plan approved by Council and the Safety Codes Council.
- Enforcing provisions of the Safety Codes Act.
- Preventing prairie or running fires and enforcing the provisions of the Forest and Prairie Protection Act, RSA2000 c F-19.
- Fulfilling the requirements of any contracted services agreements with other municipalities.
- Assisting with emergency management.
- Providing public education and information regarding emergency preparedness and community safety.
- Controlling and mitigating Incidents involving Dangerous Goods; and.
- Establishing policy and guidelines for wildfire risk reduction, suppression, and post-fire reclamation in accordance with the policies and guidelines established by the County from time to time and all applicable legislation.

In addition to providing critical emergency services, PCFS also performs day-to-day non-emergency activities which include:

- Vehicle, apparatus, and equipment preventive maintenance inspections and testing
- Skills maintenance practice and training
- Fire hall preventative maintenance and upkeep

PCFS operates out of a four fire stations,

- Acheson Fire Station – 11350 – 274 Street, Acheson
- Parkland Village Fire Station – 18, 53222 Range Road 272, Parkland Village
- Tomahawk Fire Station – 4902-50 Avenue, Tomahawk
- West Central Fire Station – 4820-52 Avenue, Wabamun

In addition, PCFS contracts fire and rescue services to designated areas within Parkland County through the following municipal fire service partners:

- Devon Fire Department– 9 Columbia Avenue, Devon
- Yellowhead County Fire Department - Evansburg Fire Station – 4907 50 Street, Evansburg
- Stony Plain Fire Department – 4000-49 Avenue, Stony Plain

Summary of Observations and Recommendations

The following recommendations are drawn from findings presented throughout the report. They are grouped into categories according to priorities: critical, short term, intermediate and long term.

A timeframe has been assigned to each recommendation, with the understanding that the start and completion of any recommendation is based on the criticality of the recommendation combined with staff capacity, annual corporate priorities, and Council-approved budget allocations.

Some recommendations presented in this report are achievable using existing staff or members' time and will therefore not pose any additional costs to the community. Other recommendations regarding staffing, equipment and infrastructure will likely have associated costs. Costs are based on order of magnitude estimates only and will require further investigation. Cost 'neutral' refers to the use of internal staff through a normal work schedule. Undertaking of these cost neutral recommendations are also contingent upon staff availability.

'Cost neutral' refers to the use of internal staff through a normal work schedule. This would include support from other internal departments that may or may not require additional resources (costs) to complete. Undertaking of these cost neutral recommendations are also contingent upon staff availability.

A timeframe within 1 – 60 months (1 – 5 years) 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. There are also recommendations that are identified as 'ongoing' activities that go beyond the 60 months.

Critical	Short Term	Long-Term
1 -12 months	12 - 48 months	48 - 60 months

Observation #1: Although the Fire Services Bylaw was approved in 2024 and is up to date with the Fire Chiefs responsibilities, it does not include specific incident types or classifications that the PCFS will respond to. Further emergency response time performance service levels or Council-approved expectations are not stated. All these components would be included in a standard of cover or service level policy to support the Fire Services Bylaw.

Recommendation #1a: Update the existing Fire Services Bylaw to ensure the bylaw reflects a set level of service provided for all areas required based on legislation, risk, and circumstances.

Reference: Section 2.13.1 Fire Station Response Demand Zone, Pg. 35

Suggested completion: 6-12 months

Recommendation #1b: Establish Standard of Cover policy identifying the performance expectations (benchmark) for each level of service identified in an updated Fire Services bylaw.

Reference: Section 2.13.1 Fire Station Response Demand Zone, Pg. 35

Suggested completion: 1-12 months

Cost: Neutral

Resource: PCFS Administration

Observation #2: Currently, PCFS utilizes a leadership and reporting structure that is a combination of both career and paid-on-call services that would otherwise be stand-alone. This can often lead to inefficiency and confusion in roles within the organization.

Recommendation #2: Conduct a review of all leadership positions within PCFS with the goal of establishing the most effective reporting structure from the Fire Chief through to all staff.

Reference: Section 3.2.2 Department Leadership Management and Operations, Pg. 44

Suggested completion: 6-12 months

Cost: Neutral

Resource: PCFS Administration

Observation #3: The Parkland County Fire Services relies on partnership agreements with neighbouring fire departments to provide effective fire and emergency response to identified fire districts within Parkland County, including:

- Stony Plain
- Devon
- Yellowhead County

Some contracts follow a 'cost sharing' model, where direct and/or indirect costs to the contracted service are shared to some degree. Interviews were conducted with chief officers from each of the contracted fire services. During the interviews, a number of themes emerged:

- All felt that the level of service being provided was meeting the needs of the community and consistent of requirements under the current agreements.
- All agreements appear in need of updates, or revisions to reflect the changes in today's environment.
- The need to ensure more open communications between departments occur and that regular meetings are scheduled for the sharing of information that impacts current and future needs of emergency response, fire protection and fire ground operations.
- It was felt that all parties explore opportunities for joint training initiatives to improve the effectiveness on the fireground and build stronger relationships amongst the frontline staff.
- The communications between parties appear to be reactive vs proactive and has caused some minor friction between the partners.

All interviewees indicated the need to ensure that any operations, procedures, or budget changes that have a direct effect on the other party in respect to the current contract must be communicated for discussion prior to implementing such changes.

Recommendation #3a: Establish regular and timely meetings between all parties. These meetings are intended to discuss any issues, challenges or opportunities prior to implementation that continues to ensure the smooth delivery of emergency services consistent with each contract.

Reference: Section 3.8 Parkland County Partnerships and Agreements, Pg. 55

Suggested completion: 12-24 months

Cost: Neutral.

Resource: Administrative time.

Recommendation #3b: As contracts become up for review, both parties explore the advantage, disadvantages, challenges, and opportunities of both the current cost sharing model and that of a fee for service model.

Reference: Section 3.8 Parkland County Partnerships and Agreements, Pg. 57

Suggested completion: 12-24 months

Cost: Cost dependant on review of existing agreements

Resource: Administrative time.

Observation #4: PCFS continues to struggle with retaining their paid-on call (casual) firefighters to the level necessary. PCFS relies heavily on their paid-on call firefighters to provide effective emergency response. Considerable investment in time and money is invested in each firefighter with the hope that each is able to be long standing members of Parkland County Fire Services. This is a common issue with many fire services throughout North America that rely on maintaining a consistent number of paid-on-call firefighters available to respond when requested.

Recommendation #4: PCFS explore and pursue opportunities to increase the retention of paid-on-call firefighters.

Reference: Section 3.9.4 Retention, Pg. 62

Suggested completion: 12 – 24 months

Observation #5: Parkland County does not have a dedicated fire training facility and utilizes the City of Spruce Grove or the City of Edmonton Training facilities for recruit training, core competency and live fire training. These facilities often have limited availability and requires taking staff and equipment outside the PCFS response zones.

Recommendation #5: PCFS explore the feasibility of a multi-jurisdictional training facility to provide live fire and specialized technical training programs.

Reference: Section 3.10.2 Training Facilities, Pg. 64

Suggested completion: 36-72 months

Cost: TBD dependant on scope and size required. Commercial construction ranges between $180 to $275 per square foot.

Resource: Utilize the Alberta Intermunicipal Collaboration Frameworks with Spruce Grove and Stony Plain

Observation #6: The current Parkland County QMP limits fire inspections to request or complaint which limits the PCFS Safety Codes Officers ability to visit individual occupancies to ensure fire safety requirements and best fire protection and life safety practices are continuing. Implementing a cyclical fire inspection process with outlines frequency and resource requirements of each occupancy will assist the effectiveness of PCFS Safety Codes officers.

Recommendation #6: In addition to maintaining the current QMP, PCFS phase in a proactive risk-based fire inspection program for industrial and higher risk occupancy properties. PCFS must complete a comprehensive evaluation of the number and occupancy type of all inspectable properties within the County including the anticipated resource requirements for their Safety Codes officers.

Reference: Section 3.12.2 Fire Code Inspection and Enforcement, Pg. 68

Suggested completion: 12-48 months

Cost: TBD depending on a staff needs assessment

Resource: PCFS Operating budget

Observation #7: PCFS does not have an accurate inventory of building stock within Parkland County.

Recommendation #7: Parkland County Fire Services work together with Parkland County Planning and Development Services to determine an accurate building inventory including building occupancy types.

Reference: Section 3.12.3 New Developments Plans Review, Pg. 71

Suggested completion: 6-12 months

Cost: Neutral, Operating budget

Resource: Administration time

Observation #8: There is no specific reference to fire requirements under the Alberta Safety Code Requirements.

Recommendation #8: Parkland County ensure that all requirements of the National Fire Code (NFC (AE) 2019) is understood and completed in the development and occupancy permitting process.

Reference: Section 3.12.3 New Developments Plans Review, Pg. 71

Suggested completion: 6-12 months

Cost: Administrative time only

Resource: Parkland County

Observation #9: PCFS staff provide a number of valuable public education and fire safety initiatives throughout the year. These activities have not historically been formally tracked within their RMS. The PCFS changeover to the new RMS system will offer the ability to effectively track and report on these important activities.

Recommendation #9: Parkland County Fire Services track all public education, fire safety and community engagement activities.

Reference: Section 3.12.4 Public Education and Development, Pg. 72

Suggested completion: Ongoing

Cost: Neutral

Resource: PCFS Operating staff time

Observation #10: PCFS currently limits their fire investigations to structure fires with significant dollar loss or injury. This limitation has been attributed to a lack of PCFS resources available for fire investigation and cause determination. All fires with a significant dollar loss, injury or death, or suspected arson must be investigated. This interpretation will expand the investigations to other fires such as vehicle fires, outside fires, or other fires with a significant, or potentially significant impact on persons or the community.

Recommendation #10: Expand the type of fire investigations that Parkland County Fire Services will investigate to include all other fires that have a significant dollar loss, injury, or death, or suspected arson and include those that have the potential to have a significant impact on persons or the community. This may require additional training and responsibility delegation to PCFS staff.

Reference: Section 3.12.5 Fire Cause and Origin Determination, Pg. 73

Suggested completion: 1-24 months

Cost: TBD depending on a staff training

Resource: PCFS Operating budget

Observation #11: PCFS staff have limited resources to complete comprehensive pre-incident planning. Feedback from PCFS staff indicate that numerous buildings within the Acheson Business Park have a high degree of occupancy change that make outdated pre-plans ineffective at best.

Recommendation #11: Working together with the development permitting process, PCFS staff should complete a pre-incident plan on high risk industrial and commercial properties when new construction or change of occupancy occurs.

Reference: Section 3.12.6 Pre-Incident Planning, Pg. 74

Suggested completion: 24-36 months

Cost: Neutral

Resource: County and PCFS Administrative staff time

Observation #12: The Acheson fire station houses the PCFS administration, fire prevention, training, career and POC firefighters. This fire station is the location of PCFS administration, training and fire prevention personnel and the primary response station for the Acheson Business Park that contains the highest risk within Parkland County. This fire station should be assessed to determine whether the current and future needs are/will be met. As an example, there is currently a shortage of dedicated office space for administrative officers and no provisions for dormitory space should this fire station move to a 24-hour, 7 day a week firefighter staffing level.

Recommendation #12: Perform a feasibility station assessment of the Acheson Fire Station to determine its ability to meet current and future requirements for PCFS.

Reference: Section 3.16.2 Acheson Fire Station Overview and Assessment, Pg. 85

Suggested completion: 6-12 months

Cost: TBD, based on internal resource availability and professional engineering requirements.

Resource: Capital budget potentially funded by Off-site levies

Observation #13: The Tomahawk fire station was designed and constructed to meet the needs of a paid-on-call fire service. This fire station has met and continues to meet the needs of the area within Parkland County. There are up to 24 POC officers and firefighters committed to this fire station. Due to the physical layout of the station, firefighters are required to walk through the day use area with their bunker gear depending on the apparatus required in either of the apparatus bays. A complete building and functionality assessment should be undertaken to determine the ongoing viability of this fire station.

Recommendation #13: Parkland County conduct a complete and comprehensive building and functional assessment of the Tomahawk Fire Station.

Reference: Section 3.16.5 Tomahawk Fire Station Overview and Assessment, Pg. 108

Suggested completion: 6-18 months

Cost: TBD based on internal resource availability and professional engineering requirements.

Resource: County and Fire Department staff time. PCFS Capital budget

Observation #14: PCFS has a number of frontline apparatus that are not included in the current replacement cycle. They include Engine 2, Rescue 2, Tower 5, Red 6, and Engine 7. These apparatuses are required in order to continue to provide the current emergency response level of service to the Parkland County.

Recommendation #14: Include the Capital funding necessary for the replacement of Engine 2, Rescue 2, Tower 5, Red 6, and Engine 7 into the Capital apparatus replacement schedule.

Reference: Section 3.17.4, Apparatus Replacement and Dispersal Pg. 117

Suggested completion: 6-12 months

Cost: Dependant on current market conditions, manufacturer, and supplier

Resources: PCFS Budget

Observation #15: PCFS alarm processing performance for emergency incidents exceeded the NFPA 1225 alarm handling standard of 64 seconds in all categories. Currently, the pre-alert times are not captured in the data presented. Time stamping for pre-alerts and truck statuses remains a manual entry process for the dispatchers, which can skew the data. The implementation of the new NG911 system will address and correct some of these processes.

Recommendation #15: Identify alarm handling process improvement opportunities and benchmarks.

Reference: Section 4.8.1 Alarm Handling Performance, Pg. 146

Suggested completion: 12-24 months

Cost: Neutral

Resource: Staff time

Observation #16: The 90th percentile assembly times are significantly above the 80 second target and more than double for incidents across the 5-year period. PCFS needs to identify best practices and potential process efficiencies for assembly time enhancements that would benefit all stations.

Recommendation #16: Explore opportunities to improve, monitor and record assembly times, particularly for fire-related and other high priority incidents.

Reference: Section 4.8.2 Assembly Time Performance, Pg. 148

Suggested completion: 12 - 24 months

Cost: Neutral

Resource: Staff time

Observation #17: Although PCFS does not have a travel time objective, it is an important component of their overall response goal. There are remote areas within the County that are unable to be reached within the time frames set out in NFPA 1720.

Recommendation #17: Review and monitor travel time as a key contributor to overall effective response time and investigate options to reduce travel time particularly as the community grows.

Reference: Section 4.8.3 Travel Time Performance, Pg. 150

Suggested completion: 12 - 24 months

Cost: Neutral

Resource: Staff time

Observation #18: The county can be divided into various response classifications identified within NFPA 1720 with Parkland Village qualifying as a suburban area, combined with the increased hazard risks identified in the Acheson Business Park, the need for improved response performance is required. Currently the response performance in District 2 (served by Parkland Village station and the Acheson station) is Acheson Station 1197 seconds, Parkland Village 1288 seconds, well over a 20-minute total response time for all incidents. For fires the total response increases to over 21 minutes.

Further the number of POC firefighters responding to incidents has been declining across the County. The median number of firefighters responding in the district 2 area is, weekdays Acheson station 7, Parkland Village station 4, and on weekends and evenings the number drops to 5 ff at both stations.

Recommendation #18: Through a phased in approach, transition the Acheson Station to a 24/7 full-time crew with full implementation in 5-years (20 firefighters).

Reference: Section 4.10 Effective Response Force, Pg. 161

Suggested completion: 12 -60 months

Cost: The cost per firefighter is $83,300-$104,200 plus benefits. Phased in over 5 years. 4 new FTE firefighters annually will cost between $333,200-$416,800 plus benefits.

Resource: Operating budget, human resources

Observation #19: A critical task analysis is embedded in the standards of response coverage. This analysis establishes the effective response force for the core services, including resource requirements and tactical priorities. Critical tasking is important to understand what staffing is needed to mitigate the identified risks and to determine what the fire department can manage with the resources PCFS currently has available.

Recommendation #19: Complete a critical task analysis as part of the standards of cover response policy.

Reference: Section 4.11 Critical Task Analysis, Pg. 167

Suggested completion: 24-36 months

Cost: Neutral

Resource: Staff time

Table of Recommendations Overview

	Recommendation	Months					
		1	12	24	36	48	60
1a	Update the existing Fire Services Bylaw to ensure the bylaw reflects a set level of service provided for all areas required based on legislation, risk, and circumstances.						
1b	Establish Standard of Cover policy identifying the performance expectations (benchmark) for each level of service identified in an updated Fire Services bylaw.						
2	Conduct a review of all leadership positions within PCFS with the goal of establishing the most effective reporting structure from the Fire Chief through to all staff.						
3a	Establish regular and timely meetings between all parties. These meetings are intended to discuss any issues, challenges or opportunities prior to implementation that continues to ensure the smooth delivery of emergency services consistent with each contract.						
3b	As contracts become up for review, both parties explore the advantage, disadvantages, challenges, and opportunities of both the current cost sharing model and that of a fee for service model.						
4	PCFS explore and pursue opportunities to increase the retention of paid-on-call firefighters.						
5	PCFS explore the feasibility of a multi-jurisdictional training facility to provide live fire and specialized technical training programs.						
6	In addition to maintaining the current QMP, PCFS phase in a proactive risk-based fire inspection program for industrial and higher risk occupancy properties. PCFS must complete a comprehensive evaluation of the number and occupancy type of all inspectable properties within the County including the anticipated resource requirements for their Safety Codes officers.						
7	Parkland County Fire Services work together with Parkland County Planning and Development Services to determine an accurate building inventory including building occupancy types.						
8	Parkland County ensure that all requirements of the National Fire Code (NFC (AE) 2019) is understood and completed in the development and occupancy permitting process.						

	Recommendation	Months					
		1	12	24	36	48	60
9	Parkland County Fire Services track all public education, fire safety and community engagement activities.						
10	Expand the type of fire investigations that Parkland County Fire Services will investigate to include all other fires that have a significant dollar loss, injury, or death, or suspected arson and include those that have the potential to have a significant impact on persons or the community. This may require additional training and responsibility delegation to PCFS staff.						
11	PCFS staff have limited resources to complete comprehensive pre-incident planning. Feedback from PCFS staff indicate that numerous buildings within the Acheson Business Park have a high degree of occupancy change that make outdated pre-plans ineffective at best.						
12	Perform a feasibility station assessment of the Acheson Fire Station to determine its ability to meet current and future requirements for PCFS.						
13	Parkland County conduct a complete and comprehensive building and functional assessment of the Tomahawk Fire Station.						
14	Include the Capital funding necessary for the replacement of Engine 2, Rescue 2, Tower 5, Red 6, and Engine 7 into the Capital apparatus replacement schedule.						
15	Identify alarm handling process improvement opportunities and benchmarks.						
16	Explore opportunities to improve, monitor and record assembly times, particularly for fire-related and other high priority incidents.						
17	Review and monitor travel time as a key contributor to overall effective response time and investigate options to reduce travel time particularly as the community grows.						
18	Through a phased in approach, transition the Acheson Station to a 24/7 full-time crew with full implementation in 5-years (20 firefighters).						
19	Complete a critical task analysis as part of the standards of cover response policy.						

Conclusion

The goal of developing this Fire Services Master Plan was to conduct a comprehensive review of the Parkland County Fire Services and produce a strategic plan for the next five years. This will provide a systematic and comprehensive approach to evaluate current response capabilities by identifying and mitigating risks and assist in formulating and communicating strategic directions for the fire service, while highlighting opportunities for improved service delivery. The FSMP will also assist in conveying information to the public, staff, and municipal council about what to expect in the municipality's approach to fire and emergency service planning, service delivery model, policy, and development.

PCFS is functioning well providing the community with a professional level of fire protection services. They are meeting their minimum requirements required under the appropriate legislation. There are opportunities for improvements related to response performance and improvements to effective response force. Further the growth that the County is experiencing and is forecasted may continue to challenge the fire service, putting further stresses on the ability to continue to delivery the service that meet the community's expectations and meet the necessary requirements under legislation. This plan looks to balance the need to provided effective service levels with the fiscal responsibility of the city to their taxpayers.

There are several observations and recommendations provided in this master plan to improve operational effectiveness and efficiencies and enhance administrative and operational processes. Key among the 21 recommendations is:

- Update the Fire Services Bylaw and Establish a Standard of Cover Policy to ensure the bylaw defines service levels and performance expectations aligned with legislation, risk, and community needs.
- Transition of the Acheson Station to 24/7 Full-Time Staffing. Implement a phased plan over five years to add 20 full-time firefighters to meet increasing call volumes and risk levels in high-growth areas.
- Develop a Local or Regional Fire Training Facility. Explore the feasibility of building a multi-jurisdictional training center to improve access to essential live-fire and specialized training.
- Implement a Proactive Risk-Based Fire Inspection Program. Phase in a proactive inspection process targeting industrial and high-risk occupancies, beyond complaint-driven inspections.
- Complete a Critical Task Analysis and Improve Response Metrics.
- Analyze staffing needs for core services, and enhance processes for alarm handling, assembly time, and travel time to improve response performance.

Although each recommendation has a corresponding timeframe, it is important to note this plan needs to be revisited on a regular basis to confirm that the observations and recommendations remain relevant. The recommendations outlined in this plan will better position PCFS to mitigate and manage community risks, monitor response capabilities and performance, and maintain excellent community relationships while providing the community 'value for money'. Notwithstanding operational observations around emergency response performance, achievement of an effective response force and the PCFS is serving the community well.

Finally, our interactions with the Parkland County Fire Service staff revealed a highly professional and dedicated organization that is committed to providing the best possible service to the citizens of the city.

SECTION 1
INTRODUCTION

1.1 Background and Significance

Community leaders across Canada continue to search for approaches that improve the efficiency and effectiveness of fire and emergency service delivery. Effectiveness refers to the ability to achieve the desired results or outcomes, while efficiency involves optimizing the use of available resources—whether it be time, money, or effort. The notion of efficiency in service delivery is often described as 'doing more for less.

Elected officials, Chief Administrative Officer, Municipal Managers, Directors, General Managers, Managers, and Fire Chiefs are often faced with the ongoing challenge of achieving efficient and effective service delivery models. Public safety is most often one of the top priorities within most communities, but achieving this goal comes at a relatively high cost.

The services charged with achieving this outcome, including Police, Fire, EMS, and Emergency Management, are essential components of the public safety services. Service effectiveness is not an option. However, the need to be fiscally responsible and to review operational efficiency and effectiveness cannot be ignored. Senior community officials must continue to be vigilant in their search for innovative and sustainable practices and finding the balance between service levels and expenditures to ensure their citizens are getting '*Value For Money*'.

1.2 Project Scope

1.2.1 Project Goal

The goal of developing this Fire Services Master Plan (FSMP) is to create a strategic plan by conducting a comprehensive community risk assessment and review the current capacity of the fire service. The goal of the FSMP is to provide a systematic and comprehensive approach to evaluate current response capabilities by identifying and mitigating risks and assist in formulating and communicating strategic directions for the fire service, while highlighting opportunities for improved service delivery. The FMP will also assist in conveying information to the public, staff, and municipal Council about what to expect in the municipality's approach to fire and emergency service planning, service delivery model, policy, and development.

While risks are the basis for triggering response decisions, our analysis also investigated the needs of the community providing a point of reference upon which future decisions and priorities can be evaluated and implemented. This includes identifying priorities, challenges, and opportunities for the improvement of the delivery of emergency services to the community, businesses, and overall public safety. This plan also considers applicable legislation, industry-leading practices, and standards along with current and anticipated risks to provide unbiased analysis and evidence-based recommendations.

Ultimately, this FMP determines options towards an optimum service delivery model and serves as a 'blueprint' for the municipality to be more effective and efficient in the delivery of emergency services through current and future challenges.

This Fire Services Master Plan considers the following benefits:

- Enhanced firefighter safety
- Improved cost control and containment
- Increased efficiency and effectiveness
- Identification of the right sized service to meet the current and future needs of the community.

1.2.2 Project Objectives

To complete this project, we tailored our activities and based our recommendations on the following objectives:

- Examined programs and the possible alignment of services and resources
- Proactively responded reviewed current and future community needs
- Assessed legislative compliance
- Reviewed appropriate and safe staffing levels are available to protect the community and firefighters 24/7 through bylaw, Alberta OHS requirements, and industry leading practices
- Explore opportunities to optimize the fire service's organizational structure
- Reviewed share services to improve efficiency and effectiveness
- Recommend cost efficiencies and cost avoidance measures as possible
- Deliver recommendations based on current and future fire protection, prevention, response, public education, service delivery, and service support needs.

1.3 Standards and References

This plan considers the following references and standards:

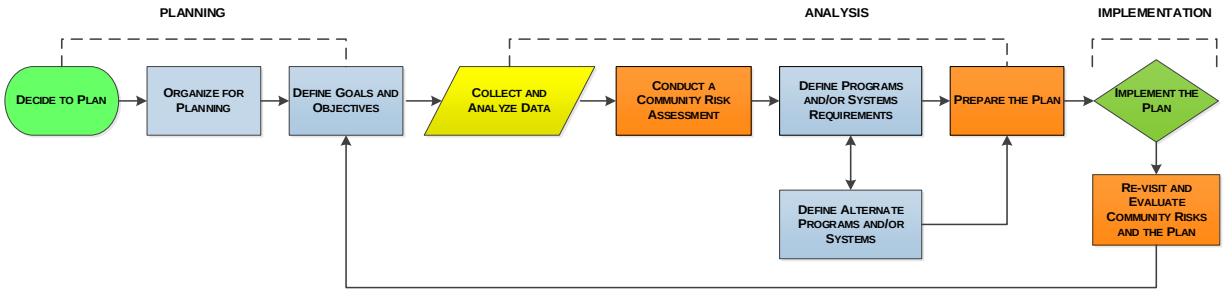
- Alberta Occupational Health and Safety, Guide for Firefighting, 2019
- Municipal Government Act, September 1,2020
- Alberta Building Code Limiting Distance and Fire Response Requirements
- Alberta Safety Codes Act, July 23, 2020
- National Building Code-2019 Alberta Edition, NBC(AE)
- Commission on Fire Accreditation International
- Canadian Standards Association (CSA)
- Fire Underwriters Survey (FUS)
- National Fire Protection Association (NFPA)
- Underwriters Laboratories (UL/ULC)

1.4 Fire Services Master Planning Process

The following diagram illustrates the process used to complete this FSMP. The FSMP is sometimes referred to as a 'road map' to the future and used as a guiding document for department leaders and decision makers.

As described in the 'implementation' phase, it is highly recommended that this plan be reviewed and evaluated, at minimum, on an annual basis or when there are unusual changes in risk, response demands, population and residential or industrial development activity. When possible, we recommend a third-party update of the FSMP at the five-year mark to apply an unbiased review into the operation and provide further credibility to the master plan process.

Figure 1: Fire Services Master Plan Process



1.5 Consultative Process

1.5.1 Community and Fire Station Tour

The community and station tour focused on the overall footprint, topography, and transportation infrastructure of the municipality, as well as the various response districts. Touring these stations provided an opportunity to conduct a general condition and operational functionality assessment. Additionally, this tour allowed for meetings with various fire department staff to discuss their respective interests in the development of the Fire Services Master Plan.

1.5.2 Online Firefighter Survey

To obtain balanced input, an online firefighter survey was used. The survey covered several topics, including risk, operations, community growth, and overall management of Parkland County Fire Services (PCFS). The survey methodology offers several unique benefits. First, it provides an opportunity to gather opinions from the entire group, as opposed to a limited sample of opinions from a select few. The online survey also offers an extremely flexible approach to data collection, allowing respondents to complete the survey questions at their convenience. Additionally, the anonymity of participants is easy to control, potentially yielding more candid and valid responses.

Finally, surveys are also extremely time and cost-efficient methods to engage large groups while capturing extensive data.

(See Appendix D:Appendix D: Online Firefighter Survey Results*)*

1.5.3 Targeted Interviews

Targeted interviews were integral to the data and information collection process. Participants were asked questions related to their areas of purview and expertise, utilizing an interview guide for structure. The interviews aimed to foster an open discussion about the community, risks, and general concerns related to both the community and municipal operations.

Table 1: Targeted Interview List

No.	Name	Job Title
1	Brian Cornforth	Interim General Manager, Community and Development Services
2	Trevor Sutherley	Deputy Fire Chief Operations PCFS
3	Robert Malchow	Deputy Fire Chief Strategic Services PCFS
4	Sean Cunningham	Acting Fire Chief
5	Fred Nash	Fire Prevention Officer PCFS
6	Ian Friesen	Emergency Preparedness Program Manager Parkland County
7	Leonard Pischke	Assistant Deputy Chief PCFS
8	Jared Berman	Captain PCFS
9	Kobe Gratzfeld	Captain PCFS
10	Jeff Dyck	COO Parkland County
11	Ric Gibbons	CIO Parkland County
12	Dave Cross	GM, Agriculture and Protective Services Parkland County
13	Nancy Domijan	GM, Development Services Parkland County
14	Carolyn Zenko	Director Finance Parkland County
15	Kara Woolsey	Director Employee Services Parkland County
16	Ryan Enright	Manager, Fleet Services Parkland County
17	Craig Heatherington	Deputy Fire Chief Spruce Grove Fire Services
18	Rob Main	Fire Chief Devon Fire Services
19	Albert Bahri	Fire Chief, Yellowhead County
20	Jason Nesbitt Dennis Wichuk	Fire Chief Stony Plain Fire Department Deputy Chief Stony Plain Fire Department
21	Cecil Lawrence	Safety Officer, Genics Inc.
22	Wayne Clarke	VP Operational Risk, Energera Inc.

	Parkland County
	Contracted Services
	Acheson Business Association

1.6 Study Considerations

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

Community-Specific Considerations

- Geographic and physical boundaries for response
- Population and future growth
- Community risk factors
- Community demographic information
- 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.

Department-Specific Considerations

- Levels of service and service delivery models
- Budgets
- Fire station locations and other infrastructure
- Support services
- Department structure
- Apparatus and equipment inventory, and future needs
- Operation and administrative staffing and qualifications
- Bylaw, policies, and procedures
- Fire prevention & public education
- Emergency core service response
- Health and wellness
- Training and recruitment records and standards
- Succession planning
- Prevention programs such as inspections, education, and enforcement
- Records and data management
- Emergency services standard operating guidelines and procedures

1.7 Municipal Comparative Analysis

An industry peer comparative analysis was conducted as a method of benchmarking the performance of departments against similar municipalities. The benchmarks encompass budgets, performance, effectiveness, and efficiencies. While fire and emergency services share the goal of protecting life and property, each community has unique features influencing how they achieve their objectives. The main criteria for the comparative analysis revolve around indicators of effectiveness and efficiencies in risk management and mitigation across communities.

The communities who participated, along with the Parkland County, included:

- Rocky View County
- Sturgeon County
- County of Leduc
- Foothills County
- Red Deer County
- County of Grande Prairie

For this municipal comparator review, we used 2019-2023 information from each of the reference communities. Although fire and emergency services have the same goal of protecting life and property, each community has unique features in accomplishing those goals. Our main criteria for collecting information were:

- Population – Utilizing 2021 Census data for consistency
- Budgets – 2024 reported budgets as provided by the fire department
- Department size - as provided by the fire department
- Type (full-time, part-time or combination) - as provided by the fire department
- Department staffing - as provided by the fire department
- Number of fire stations - as provided by the fire department
- Call volume - as provided by the fire department
- Call types - as provided by the fire department

Table 2: Participating Community Comparatives

Community	Population (2021)	Land Area (km^2)	Area of Response (km^2)
Parkland County	32,025	2390.23	2390.23
Rocky View County	41,028	3829	3836.33
Sturgeon County	20,061	2200	2090.13
County of Leduc	14,416	2502	2601.49
Foothills County	23,199	3604	3636.8
Red Deer County	19,933	3949	3961.85
County of Grand Prairie	23,769	5500	5802.21

Source: 2021 Census Canda

1.7.1 Budgets

Department budgets are of particular importance for most communities. In some instances, fire and emergency services are a considerable portion of a community's operating budget.

Table 3: Community Comparative Budget Ranking

Community	Municipal Budget 2024	Emergency Services Operating Budget	% of Municipal Budget	Cost Per Capita
Parkland County	$75,917,622	$6,577,200	8.7%	$204.00
Rocky View County	$85,577,100	$15,650,500	18.2%	$531.16
Sturgeon County	$80,000,000	$3,500,000	4.4%	$134.00
County of Leduc	$96,943,699	$7,921,359	8.%	$549.48
Foothills County	$97,772,247	$6,476,000	6.6%	$263.21
Red Deer County	$66,464,798	$2,647,821	3.9%	$131.00
County of Grand Prairie	$223,500,00	$11,666,090	5%	$490.81
Per Capita Net Expenditure Fire: $204.00				
Mean/Average Per Capita Net Expenditure Fire: $329.09				

1.7.2 Department Profile

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

Table 4: Community Comparative Departments' Profile

Community	Parkland County	Rocky View County	Sturgeon County	Leduc County	Foothills County	Red Deer County	County of Grande Prairie
Department Type	Composite	Composite	Composite	Composite	Composite	Composite	Composite
No. of Stations	4	7	5	6	6	6	9
Total Staff	136	245	95	136	76	120	220
Fire Chief (FT/PT)	1 FT	1 FT	1 FT	1	1 FT	1 FT	1 FT
Total Deputy Chief (PT/FT) Total Assistant Deputy Chief (ADC)	3 FT	2 FT	2 FT	3 FT 1 PC 24/7	1 DC, FT	2 DC, FT 3 ADC FT	3 DC, FT 2 Dist. Chief, FT
Total Support Staff (PT/FT)	.7 FTE	3.5 FTE	1 @ .5 FTE	1 FTE	2 FTE	1 FTE	2 FTE
Total Suppression Staff (PT/FT)	91 POC 27 Casual 13 FT (includes Chief Officers as required, when available)	36 FT 80 POC 129 PT	14 FT 75 POC	16 FT 110 POC	16 FT 55 POC	120	40 FT 5 @ Contract Stations 160 POC/Vol.
Total Fire Prevention Staff (PT/FT)	1 FT	2 FT	0	1 FT	1 FT	1 (ADC)	1 FM, 1 FPO
Total Training Staff (PT / FT)	0	0	0	0	0	0	0
Total Dispatch Staff (PT / FT)	1 ECC Manager 4 ECC Team Leads 8 FT, 4 Casual, 2 PT	0	0	0	0	0	0
Mechanical	0	0	1	2 FT	0	1 (ADC)	1 FT
Other	1-Maintenance and Logistics Coordinator 1-Wildfire Mitigation Specialist 1-Emergency Preparedness Program Manager	NA	NA	NA	NA	NA	NA

1.7.3 Industry Standards

Table 5: Community Comparative Standard of Cover

Community	Standard of Cover	Standard of Cover approved by Council	Is the standard based on a leading practice such as NFPA 1710/ 1720 and or the Alberta OHS Regulations for firefighters?
Parkland County	No	No	No
Rocky View County	Yes	Yes	No
Sturgeon County	No	No	No
County of Leduc	No	No	No
Foothills County	Yes	Yes	No
Red Deer County	No	No	Yes, in Q1 of 2025
County of Grand Prairie	Yes	Yes	Yes

1.7.4 Response Data

The same 2019–2023 information was used in comparing the response data for each community. Information is shared using two categories: Incident Type and Call Volume. Using these breakdowns allows for the uniqueness of each community to be represented as well as highlighting the areas of similarity for fire and emergency response.

As there is no standard for categorizing incidents it must be clearly understood that these statistics are broad based and are only a general reference point when comparing fire departments. Because each of the surveyed communities' organizational structure, core services and levels, emergency response categorization, and financial systems are distinctly unique, the community comparative analysis should only be used as a very basic level of interpretation. Direct comparison is strongly discouraged.

Table 6: Examples of Incident Types for Statistical Analysis

Incidents by Type		
Medical Related Calls		
Call Types	Pre-Hospital Care: Alpha, Bravo Charlie Delta Echo	
	Lift Assist	
	False Alarms	
Fire-Related Calls		
Fire Emergency	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)	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	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.*

Table 7: Municipal Comparative Response Call Volume

Community		Parkland	Rocky View	Sturgeon	Leduc	Foothills	Red Deer	Grand Prairie
Total Call Volume	2019	859	1755	765	945	917	669	1888
	2020	859	1648	666	706	767	763	1575
	2021	999	1915	813	920	974	862	2088
	2022	934	2130	918	1090	963	828	2165
	2023	1060	2401	881	1347	992	896	2790
Fire Related Calls	2019	749	1191	480	754	302	458	663
	2020	796	1134	538	597	254	465	707
	2021	929	1394	565	818	336	531	1501
	2022	827	1459	592	967	263	539	1378
	2023	968	1614	564	1210	287	583	1634
EMS Related Calls	2019	110	564	285	191	615	211	634
	2020	63	514	128	109	513	298	766
	2021	70	521	248	102	638	331	587
	2022	107	671	326	123	700	289	787
	2023	92	787	317	137	704	313	1156

1.7.5 Community Comparative Analysis Summary

For the budget year of 2024, the seven services surveyed have operating budgets within the range of $2.6M to $15.6M annually. From highest to the lowest, PCFS ranks 5th among municipalities surveyed, 5th for cost per capita, and is ranked 2nd for the percentage of municipal budget.

It is noted that Parkland is the only department operating a fire dispatch centre and will result in increased additional budget costs that the others would not experience. Combined all the results Parkland County is considered on the lower side of most rankings but does not indicate any major concerns in comparison with the other departments. For the purposes of this report dispatch services and emergency management were not included.

There is no standard for categorizing incidents so it must be understood that these statistics are broadly based and are only general reference when comparing fire departments. The community comparative analysis can only be interpreted from an indirect basic level due the disparity from each of the surveyed communities' organizational structure, core services and levels, emergency response categorization, and financial systems. Direct comparison is strongly discouraged.

SECTION 2
THE ENVIRONMENT

2.1 Community Overview

Located in central Alberta, just west of Edmonton, Parkland County is a community that has a blend of progressive planning, economic development, and natural landscapes. Its landscape consists of scenic lakes, lush farmland, and well-preserved green areas. Located in the western half of the County is Wabamun Lake; a popular spot for outdoor enthusiasts who appreciate hiking, cycling, and water sports. [3]

With a population of approximately 33,671[4] (2024), the County has seen steady growth in recent years. Its economy is diverse, driven by industries such as power generation, forestry, oil and gas, advanced manufacturing, transportation, and agriculture. The Acheson Industrial Area is one of North America's largest industrial parks which serves as a critical hub for business and employment in the region.

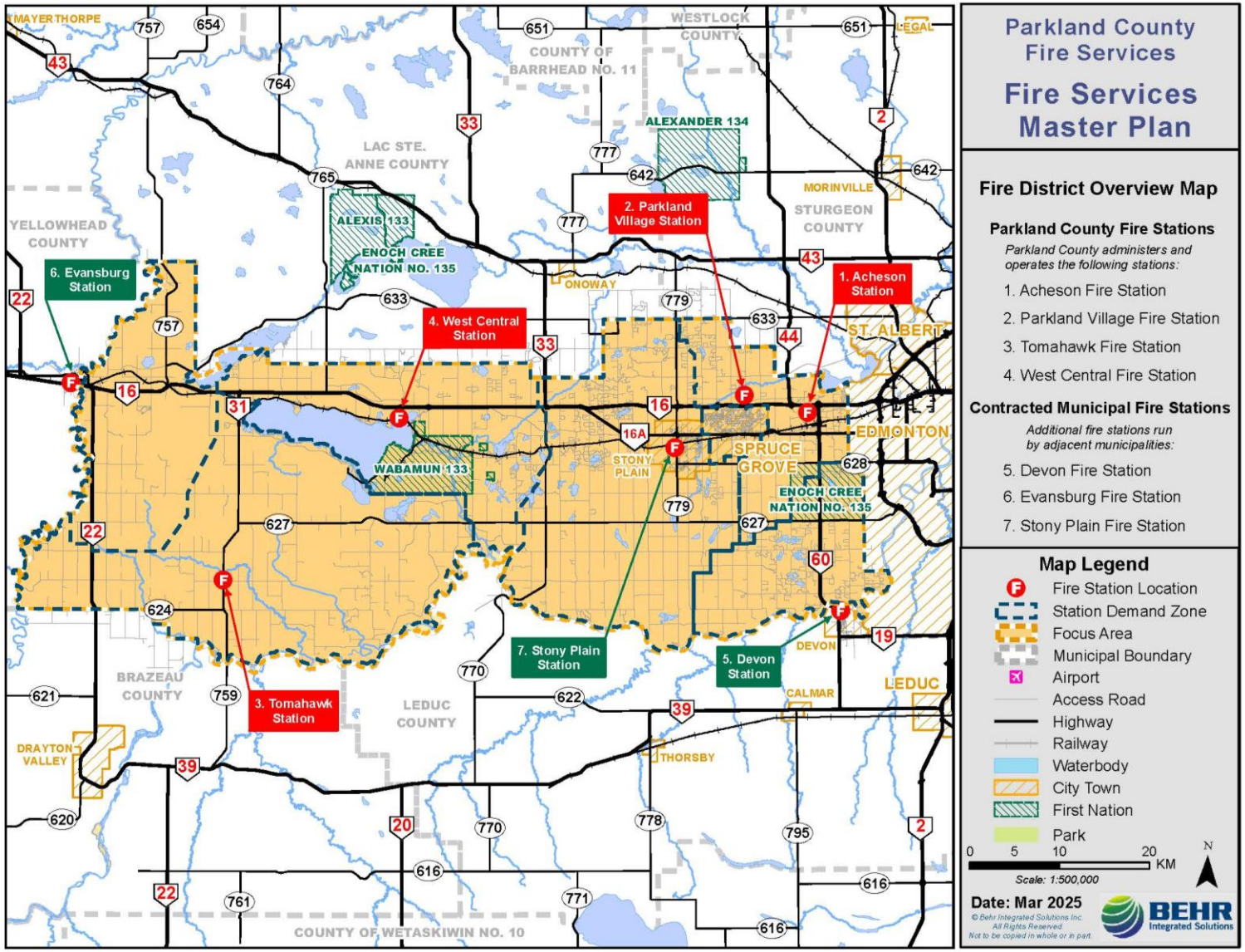
Parkland County is a rural community with a vision of a thriving future. This vision is set through the County's Municipal Development Plan (MDP). The MDP is a high-level plan that guides the County's growth by setting the direction for residential, industrial, and recreational development for the next 30 years. The MDP contains policies for future land use, infrastructure and transportation requirements, and areas for environmental protection.[5]

[3] *https://www.exploreparkland.com/about-parkland/*

[4] *https:// regionaldashboard.alberta.ca/region/parkland-county/population/#/*

[5] *https://regionaldashboard.alberta.ca/region/parkland-county/population#/*

Map 1: Parkland County Overview Map



2.2 Economic Indicators

The county has prioritized economic development, working to achieve sustainable growth and diversity. Updating the Municipal Growth Plan to encourage responsible growth and introducing initiatives like the Idea Farm and Mobile Maker Space to assist regional innovators and business owners are important endeavors. [6]

The relative wealth of the area was demonstrated by Parkland County's median household income of $115,005 in 2015. Employment in the area spans a variety of industries, with significant representation in construction, retail, and health care. While the local unemployment rate has varied over time due to Alberta's broader economic trends, it rose above 9% in 2016 following the energy sector downturn in 2014. [7]

The Acheson Industrial Area is one of the county's economic pillars. With more than 200 companies spread across 4,000 hectares, it is a major center of regional economic activity. The Acheson Industrial Area is one of North America's largest industrial parks which serves as a critical hub for business and employment in the region.

All things considered, Parkland County has a solid economic base, with a workforce that is well educated, a variety of industries, and aggressive measures to guarantee innovation and sustainable growth. [8]

[6] *https://www.sprucegrove.org/media/2735/trimunprofilepcfinal-june-15.pd*

[7] *https://www.parklandcounty.com/en/business-and-development/talent-and-labour-market.aspx*

[8] *https://www.emrb.ca/wp-content/uploads/2024/04/Member-Muni-Profile-Parkland-County-2023.pdf*

Table 8: Major Manufacturing Employers in Parkland County [9]

Company	Product/Service	Employees
Rotorchrome Industries Inc	Manufacturing and re-manufacturing of industrial rotors	~10-19
Gold Top Manufacturing & Distribution Ltd	Manufacturing and distribution services	Unknown
V-Ness Design & Print Services	Design and print manufacturing services	Unknown
Caprice Machine Works	Machine work services	~1-25
Fabco Plastics Western Ltd	Plastic manufacturing for industrial and construction projects	~1-25

Table 9: Major Non-Manufacturing Employers in Parkland County [10]

Company	Product/Service	Employees
Parkland County	Municipal government services	400+
Amazon	Warehouse and Consumer Distribution Centre	1000+
Champion Pet Foods	Pet Food production	~200
Overwaitea Food Group/ TCL Supply Chain	Grocery Retailer	~120
TransAlta	Generation Plant	~150
Standard General	Major Civil Construction Contractor	~60
Manitoulin Transport	Truck Transportation	~120
Tri-Municipal Family Leisure Corporation	Amusement and recreation services	~118
Fortis Alberta	Utility Company	~65

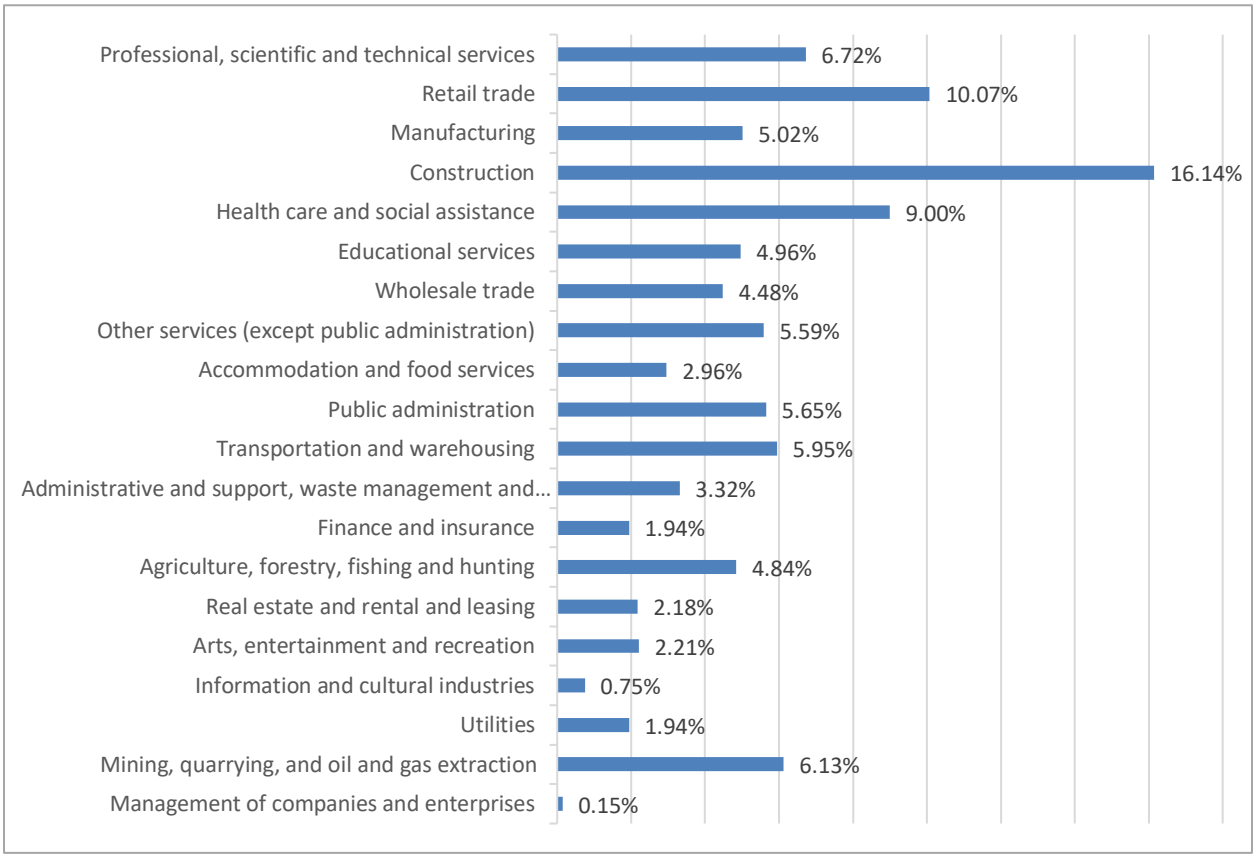
[9] *https://www.dnb.com/business-directory/company-information.manufacturing.ca.alberta.parkland_county.html*

https://business.gprchamber.ca/list/category/manufacturing-205

[10] *https://reviews.canadastop100.com/top-employer-parkland-county*

https://www.investsprucegrove.ca/media/userfiles/subsite_84/files/TopEmployersinEdmontonAchesonandSpruceGrove.pdf

Figure 2: Economic Sectors (2021)



2.3 Growth Projections

Parkland County is anticipating significant growth over the coming decades. Projections from the Edmonton Metropolitan Region Board (EMRB) estimate the county's population will grow at an annual rate of 2.0% over the next 25 years[11]. This growth is part of a larger regional trend, with the EMRB projecting that the combined population of its 13 member municipalities will increase from 1.48 million in 2021 to between 2.01 million and 2.63 million by 2050[12].

Parkland County is revising its Municipal Development Plan (MDP) to account for projected expansion. The Technical Growth Study, which looks at population patterns to guide infrastructure development and land use planning, is a crucial step in this process[13].

[11] *https://www.parklandcounty.com/en/county-government/Reports%2C-Studies-and-Plans/Transportation-Master-Plan/RPT_Transportation-Master-Plan_Final_Compress.pdf*

[12] *https://edmonton.taproot.news/briefs/2024/03/08/emrb-plans-for-one-million-more-people-by-2050*

[13] *https://yourparkland.ca/mdp/widgets/161670/faqs*

Note: *The Edmonton Metropolitan Region Board (EMRB) was the local growth planning body for the region until it was dissolved in 2025. In 2024, the EMRB estimated the county's population will grow at an annual rate of 2.0% over the next 25 years*

2.4 Community Demographics

2.4.1 Population Growth

Table 10: Population growth (2016-2021)

2021	2016	% Change
32,205	32,737	-1.6%

2.4.2 Average & Median Age

Table 11: Average and Median Age 2021[14]

	Total	Male	Female
Average Age	42.3	42.4	42.6
Median Age	45.2	45.2	45.2

2.4.3 Population Distribution

Table 12: Population Distribution 2021

Age Range	Total	Male	Female
0 to 14 Years	5,720	2,995	2,730
15 to 64 Years	20,660	10,635	10,025
65+ Years	5,820	3,105	2,720

2.4.4 Age Distribution in Percentages

Table 13: Age distribution 2021

Age Range	Total	Male	Female
0 to 14 Years	17.80%	17.90%	17.6%
15 to 64 Years	64.2%	63.5%	64.8%
65+ Years	18.10%	18.60%	17.60%

[14] *https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?Lang=E&SearchText=pickering&DGUIDlist=2021A00054811034,2021A00053518001&GENDERlist=1,2,3*
&STATISTIClist=1&HEADERlist=0

2.5 Community Planning and Development

Parkland County's community planning and development are primarily guided by the Municipal Development Plan (MDP), which outlines a 30-year vision for growth and development. The MDP addresses future land use, infrastructure, transportation, and environmental protection. Key components of the MDP include:

- **Growth Areas**: Designating districts for residential, industrial, and recreational development.
- **Infrastructure Planning**: Outlining requirements for transportation networks and utilities to support anticipated growth.
- **Environmental Stewardship**: Identifying and protecting environmentally significant areas to ensure sustainable development.

The MDP serves as a high-level guide, identifying areas designated for residential, industrial, and recreational development, while also addressing land use, infrastructure, transportation, and environmental conservation.

As shown in Map 2, Development Concept Map, taken from the MDP, in the next 30-years Wabamun Hamlet is identified as a priority growth hamlet and a hub for housing, employment and recreation. The Acheson Industrial Area will remain the focus of industrial growth. Country and rural residential growth will occur in pockets throughout the County, however predominately in the Lake Country and River Edge areas.

Map 2: Development Concept Map

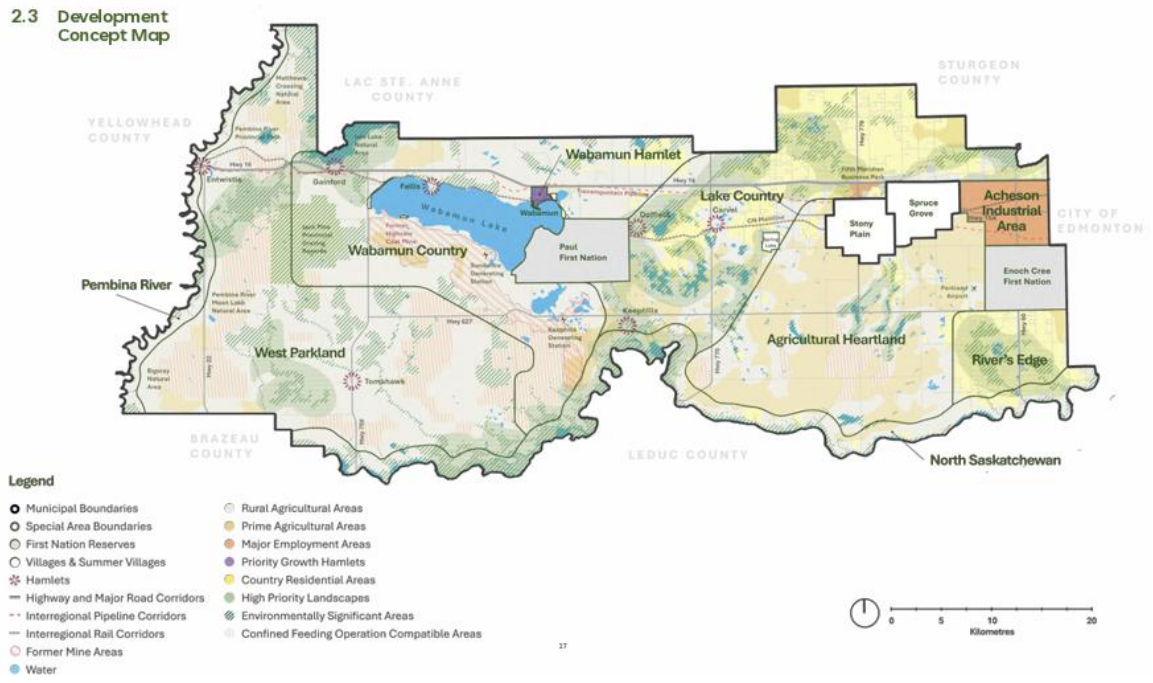


Image Source: Parkland County

2.6 Community Risk Assessment

Risk can be managed by either 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.

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.

Community Risk Assessments allow fire departments to make informed decisions about the types and levels of fire protection services provided based on identified risks. Specifically, the following nine (9) profiles will be reviewed:

10. Geographic profile
11. Building stock profile
12. Critical infrastructure profile
13. Demographic profile
14. Hazard profile
15. Public safety response profile
16. Community services profile
17. Economic profile
18. Past loss and event history profile

The information and data gathered to address each of the profiles will assist in determining and prioritizing risks to public safety in the community and determining the fire protection services to be provided by municipalities to address those risks.

Risks were identified using historical response data, hazard risk vulnerability assessments and information from our interviews to develop a risk profile for the community. The evaluation of fire and 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.

2.6.1 Factors Contributing to Risk

As mentioned, every municipality has unique challenges and characteristics contributing to the overall risk profile of the community. Examples of 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
- Topography
- Weather
- Historical response data

2.7 Risk Management

All communities require a process to identify and actively manage high-priority risks. As previously discussed, there are 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 first step in the risk management process includes the assessment of the probability and consequence of specific risks. The next step is the assessment to 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 last step in the 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.

Image 1: Risk Management Cycle Process

In Canada, local governments are charged with delivering fire and rescue response services for their citizens. Elected officials are the 'Authority Having Jurisdiction' (AHJ) who determines the level of service required to manage fire and rescue risks to an acceptable level. The challenge for elected officials lies in determining the best balance between investing in adequate emergency services and accepting a certain level of risk.

2.8 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 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, recovering from the fire loss of a large employer's property or key public infrastructure in smaller municipalities can be difficult. 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.

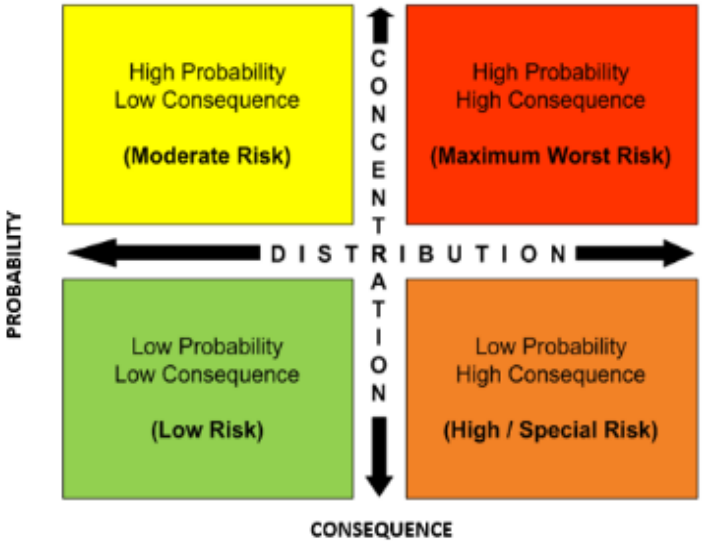
Social and cultural impacts as experienced with the loss of historic buildings, recreation facilities or non-critical community infrastructure, are considered but do not typically affect how fire department resources are deployed.

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, the appropriate services and 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 their locations within 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 workforce 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 Figure 3) 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 3: Risk Evaluation Matrix



2.8.1 Assigning Risk Level

Once probability and consequence are determined, the level of risk is calculated by multiplying the numerical values for probability and consequence. The relationship between probability and consequence as it pertains to risk levels can be illustrated in a risk matrix (below). In a risk matrix, probability and consequence are defined on separate scales with varying descriptors providing direction on how to assign the probability and consequence of an event. Figure 4 shows the risk matrix utilized in the updated CRA. The purpose of assigning a risk level is to assist in the prioritization of the range of risks that are identified in the CRA.

Figure 4: Risk Matrix Template

Probability/ Consequence	Insignificant 1	Minor 10	Moderate 100	Major 1,000	Catastrophic 10,000
Almost Certain 10,000	Moderate	Moderate	High	High	High
Likely 1,000	Moderate	Moderate	Moderate	High	High
Possible 100	Low	Moderate	Moderate	Moderate	High
Unlikely 10	Low	Low	Moderate	Moderate	Moderate
Rare 1	Low	Low	Low	Moderate	Moderate

Where possible, quantitative data was used to inform the risk assignment as described in the rationale in the table. It is important to recognize that with the availability of new or updated data, the probability levels could change or be refined. The rationale provided for both probability and consequence consider information from the CRA's nine profiles to inform decision-making about the provision of fire protection services in the specific municipality/community.

2.8.2 Summary of Identified Risks and Key Findings CRA

The 2025 BEHR Community Risk Assessment summarizes 26 identified risks which are categorized as:

2 - Low

17 -Moderate

7 – High

The CRA further identifies 30 key findings that are potential risks or areas that Parkland County is currently managing and do not represent a current risk. PCFS should continue to monitor these key findings in the future and address appropriate should they become identified risks.

2.8.3 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 substantial 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.

2.8.4 Dangerous Goods Response

Parkland County has developed their Transportation Master Plan to address the immediate and future transportation needs to manage the County's transportation system over the next 25 years. This plan includes design, maintenance, and usage of County roadways. In the plan, dangerous goods routes are identified to assist with the safe transportation of dangerous goods through the County.

The transportation of dangerous goods provides the highest degree of risk for spill or leak. A dangerous goods incident can result in environmental contamination, fires, or even explosions, posing risks to nearby communities, waterways, and wildlife.

Highway 16 that runs through Parkland County is a major east-west transportation highway connecting Jasper to Lloydminster via Edmonton and forms a portion of the Yellowhead Highway. Average daily traffic volumes range from 10,000 to 30,000 vehicles with variations depending on peak travel times and the time of the year. Transport vehicles depend on this highway for the transportation of goods including a significant amount of dangerous goods.

Additionally, Canadian National Railway (CN Rail) maintains a double track rail line that passes through Parkland County. This railway plays a vital role in freight transportation, including a significant amount of dangerous goods every day.

Parkland County is also home to one of the largest industrial parks in western Canada - Acheson Industrial Area. Dangerous goods may be transported to and from various businesses, typically by transport trucks or courier companies.

Controlling the release of dangerous goods often requires highly specialized training and equipment. Although the probability of an incident of this type is low to moderate, these incidents are typically categorized as extreme or extremely high hazard events. Given the types and quantities of dangerous goods being transported by road and rail, the resources required to safely manage these events will exceed the required

competencies and capacity of all but the largest communities in Alberta. As a result, fire departments from most 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 outside private agencies and contractors, often under contract to the shipper or supplier, who can maintain specialized competencies and equipment to completely control the release. PCFS' level of dangerous goods response capabilities is further discussed in Section 3.14.4.

2.9 Existing Major Building Classification Summary

Analysis of Parkland County's major building occupancy types was conducted using data provided by the municipal assessment of Parkland County, municipal development plans, and data from the 2021 census. Table 14 provides a summary of Parkland's existing major building occupancy classifications. *The majority of Parkland County's existing property stock is comprised of Group C - Residential Occupancies and 88.5% of those are single-detached homes.*

Table 14: Existing Major Building Classification Summary

NBC Occupancy Classification	Major Building Classifications	Number of Occupancies
Group A	Assembly Occupancies	186
Group B	Care or Detention Occupancies	NA
Group C	Residential Occupancies - Total	11,915
Group C	Residential Occupancies – Single Detached	10,550
Group C	Residential Occupancies – Semi-Detached House	100
Group C	Residential Occupancies – Row House	20
Group C	Residential Occupancies – fewer than five stories	35
Group C	Residential Occupancies – five or more storeys	0
Group C	Other single-attached house	10
Group C	Mobile Homes / Trailers	1195
Groups D & E	Commercial	*NA*
Group F (all Divisions combined)	Industrial Occupancies	*NA*

Note: *Group B, D & E and F's information was not available. Recommendation # 6 addresses the shortcomings.*

Consistent with most other municipalities in Canada, Group C - Residential Occupancies represent the most prominent type of building occupancy type. Incident reporting from the Alberta Fire Commissioner indicates that 73% of structure fires loss over the ten-year period from January 1, 2013, to December 31, 2022, occurred within Group C - Residential Occupancies.

2.10 Potential High-Fire Risk Occupancies

Potential high fire risk occupancy is another factor for consideration within a municipality's building stock. High fire risk can be linked to a combination of factors such as building density (exposures), building age, and construction. Fuel load typically refers to the amount and nature of combustible content and materials within a building. This can include combustible contents, interior finishes as well as structural materials. Combustible content tends to create the greatest potential fire loss risk. Higher fuel loads results in increased fire loss risk due to increased opportunity for ignition and increased fire severity. For example, in many communities, large amounts of fuel load can be contained within a single occupancy, such as a building supply business, within a large multi-unit residential building, or within a historic downtown core.

2.10.1 Fuel Load Concerns

Buildings with potential fuel load concerns are identified in Table 15. These include buildings housing materials such as oxidizers and flammable and combustible liquids and chemicals.

Table 15: Potential High Fire Risk Occupancies

Company/Facility Name	Location	Risk Description
Amazon	Acheson	Large warehouse, high fire load, flammable/combustible products for retail
North America Construction Group	Acheson	Heavy Equipment & Mining
Stihl	Acheson	Power Equipment Center
Canfor	Acheson	Lumber, Pulp, Paper & Sustainable Wood Products
Fountain Tire	Acheson	Distribution Center
Standard General	Acheson	Aggregate Products
The Home Depot	Acheson	Home design products, tools, and services
Viterra	Acheson	Grain & Special Crops Facilities; Port Terminals; Oilseed Processing, Grower Programs
Drax	Entwistle	Wood Pellet Manufacturing

In addition to ensuring compliance to the requirements of the NBC(AE) and the NFC, there are operational strategies that a fire service can implement to address fuel load concerns. These include regular fire inspection cycles and pre-planning of buildings of this nature to provide an operational advantage in the event of fire. It should be noted that some of these companies do routinely update emergency response plans and share them with the fire services.

2.11 Occupancies with Potential High Fire Life-Safety Risk

Fire risk does not affect all people equally. Those who are at an increased risk of fire injury or fatality are known as vulnerable individuals. In the event of a fire, these individuals may be unable to self-evacuate and/or require assistance in their evacuation efforts. Identifying the location and number of vulnerable individuals or occupancies within the community provides insight into the magnitude of this demographic within a community.

2.11.1 Registered Vulnerable Occupancies

From an occupancy perspective, vulnerable occupancies contain vulnerable individuals who may require assistance to evacuate in the event of an emergency due to cognitive or physical limitations, representing a potential high-life safety risk. The NFC defines vulnerable occupancy as any care occupancy, care and treatment occupancy, detention occupancy or educational occupancy.

These occupancies house individuals such as seniors or people requiring specialized care. It is important to note, however, that not all vulnerable individuals live in vulnerable occupancies; for example, some seniors who are vulnerable due to physical limitation can live on their own or in subsidized housing, making them a key demographic to reach.

A list of vulnerable occupancies is presented in Table 16 below. There is one vulnerable occupancy identified in Parkland County.

Table 16: Vulnerable Occupancies

Property Name	Occupancy Type	Location
Everglades Special Care Lodge	Assisted Living	53215 Range Road 21

2.11.2 Other High-Fire Life Safety Risk Occupancies

From a risk perspective, it is valuable for a fire service to identify additional potential high fire life-safety risk considerations. This includes day care facilities and schools, where children, due to their age and potential cognitive or physical limitations, may face challenges in self-evacuation during emergencies. For the purposes of this CRA, potential high life-safety risk occupancy considerations encompass schools and licensed day care facilities. It is worth noting that many schools also offer before and after-school childcare services for children aged 4-12, as well as childcare centers for infants to pre-school-aged children.

Table 17: Schools

	Occupancy Type	Location
Duffield School	K –9	Duffield
Entwistle School	K –9	Entwistle
Tomahawk School	K –9	Tomahawk
Wabamun School	K – 9	Wabamun
Muir Lake School	K – 9	Parkland County
Graminia School	K – 9	Parkland County
Blueberry School	K – 9	Parkland County
Parkland Village School	K - 6	Parkland County
New Testament Baptist School	1 - 9	Parkland County
Bright Bank Academy	K - 5	Parkland County

2.12 Community Risk Analysis Overview

The County's HIRA was reviewed and updated in 2021. As a component of the risk assessment and risk analysis process, the top risks in Parkland County were identified. The CRA assigned likelihood and consequence levels to a list of hazards based on the potential for impacts to people, property, and the environment. As a result of this analysis, the top hazards in the County include the following:

- Hazmat Rail/Road
- Forest Fire
- Oil or natural gas release
- Hazmat (Fixed Site) – Pipeline-Storage Facility
- Tornados
- Blizzards
- Farm Animal Disease
- Major Road Accident

In addition to the overall highest risks to the community, certain events pose an increased risk specific to firefighting. The risk to firefighting responders to the most hazardous events are identified below, as well as the most hazardous events they may encounter that pose a specific risk to them and their ability to respond.

2.13 Impacts of Hazards on Fire Protection Services

To better understand the risks of hazards as they pertain to fire protection services, the hazards have been assessed to identify possible impacts on fire protection services (excluding fire/explosion). Many of the potential impacts are not unique to a jurisdiction. The results of this review as they pertain to the hazards in the County are presented in Table 18.

Table 18: Impacts of Hazards on Fire Protection Services

Hazard	Possible Impact
HAZMAT Transportation Rail, Road	Overall Impact Serious injury or fatality. Possible secondary emergencies such as fire or explosion when chemicals mixed with air, water, or other agents. Could require small- or large-scale evacuation of homes, businesses, school etc. Could result in transportation disruption and road closure and required detours. Fire Services Depending on the severity and type of release, could pose secondary risk to firefighters on-scene. Must have proper knowledge of chemical release and Hazardous material training. Requires support from rail owners. May require securing a large scene and additional support from contracted services. Ensure contracted services agreements are in place
Forest Fire (Wildfire)	Overall Impact Serious Injury or fatality. Could require small or large-scale evacuation of homes, business, schools etc. Could result in transportation disruption and road closures and required detours. Fire Services Depending on the severity and scale of fire incident, could pose secondary risk to firefighters on-scene. Must have extensive wildfire response training. Must maintain contracted services agreements with neighbouring response agencies and Alberta Wildfire. Must maintain contract agreements with specialized response services such as helicopter, sprinkler, and pumping services.

Hazard	Possible Impact
Oil and Gas Emergency	Overall Impact Serious injury or fatality. Possible secondary emergencies such as fire or explosion. Could require small- or large-scale evacuation of homes, businesses, school etc. Could result in transportation disruption and road closure and required detours. Fire Services PCFS would be responding on behalf of the County, however, these facilities have their own trained designated first responders who can respond and control Level 1 and Level 2 incidents. If an incident meeting the criteria of Level 3 occurs, outside agencies and assistance would be required. Possible secondary emergencies such as fire or explosion. Could require small- or large-scale evacuation of homes, businesses, school etc. Must have specialized training. May require additional support from contracted services partners. May require co-ordination of emergency response plans among governmental units, businesses and first responders.
Hazmat (Fixed Site) – Pipeline-Storage Facility	Overall Impact Serious injury or fatality. Possible secondary emergencies such as fire or explosion when chemicals mixed with air, water, or other agents. Could require small- or large-scale evacuation of homes, businesses, school etc. Could result in transportation disruption and road closure and required detours. Fire Services Depending on the severity and type of incident, could pose secondary risk to firefighters on-scene. Possible secondary emergencies such as fire or explosion when chemicals mixed with air, water, or other agents. Could require small- or large-scale evacuation of homes, businesses, school etc. Must have hazardous material training. May require additional support from contracted services partners. May require co-ordination of emergency response plans among governmental units, businesses and first responders.
Tornado High Wind	Overall Impact Above ground power lines could impact buildings or roads and winds could take down communication towers. Life safety risk, in particular to vulnerable population. Multiple areas of damage Fire Services Depending on the severity of the debris on roads and downed power lines, access to various sections of the road network could be limited to fire service response delaying emergency response times. Interruptions to communication towers could impact fire service communications. Continued coordination of emergency response and operations plans among governmental units and first responders. Multiple locations requiring additional resources and the necessity for unified command and inter-agency collaboration

Hazard	Possible Impact
Blizzards	Overall Impact Above ground power lines could be impacted along with road treatments, debris clearing, salt gravel or other road treatment supplies. Increase in call volume due to vehicular incidents, rescues. May require short-term shelters for residents Fire Services Depending on the severity of the debris on roads and downed power lines, access to various sections of the road network could be limited to fire service response delaying emergency response times. Interruptions to communication towers could impact fire service communications. Continued coordination of emergency response and operations plans among governmental units and first responders. Multiple locations may be requiring additional resources simultaneously.
Farm Animal Infectious disease	Overall Impact Farm stability at risk. Increased use of non-recyclable PPE for staff. Critical infrastructure must be maintained with planning for staffing and acquisition of critical supplies. Fire Services First responders must be educated on local protocols during localized emergencies during outbreaks. Fire services currently take on a large number of medical calls. PPE can be severely limited and supply chain issues for all equipment can impact operations. Planned programming related to inspections and public education may need to be delayed or modified.
Major Road Accident emergency	Overall Impact Threat to life safety. Impact to road network, downed power lines and vehicular fires. Fire Services Pose secondary threat to responders of fire or explosion. Delayed response in accessing scene. May require support for high number of injuries/fatalities and/or rescues.

2.13.1 Fire Station Response Districts

As detailed in Section 4 of this FSMP, Parkland County is identified as rural centre with a small suburban component in the northeast of the municipality. It is staffed with paid-on-call (POC) firefighters and the NFPA 1720: Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operation to the Public by POC Fire Departments Standard provides the framework and principles to review and address emergency response performance. This standard will be detailed further in this section.

Under the Municipal Government Act the municipality through their Council has the responsibility to set the level of service to be provided by the Fire Department. This is typically identified through an up to date establishing and regulating (E&R) Bylaw. This bylaw will establish the fire department, provide an overview of structure, outline duties and responsibilities, identify the various department divisions, provide for any powers, responsibilities, and authority of the Fire Chief, and will describe the levels of service and performance expectations to be provided by the fire department. The current E&R by-law was approved by Council in 2024 and is known as the Fire Services Bylaw,

The establishment of response performance expectations approved by Council should provide clear objectives for the fire service to meet. It should also allow for the fire service to identify the necessary resources required to meet the service levels. The current bylaw does not detail any performance expectations and identifies the fire department's purpose in general terms only. It does not detail the type of incidents to respond to, nor does it detail the performance expectations. The establishment of benchmark performance expectations will support PCFS to demonstrate a continuous improvement environment with incremental improvements to move the yardsticks towards achieving the designated benchmark.

Observation #1: Although the Fire Services Bylaw was approved in 2024 and is up to date with the Fire Chiefs responsibilities, it does not include specific incident types or classifications that the PCFS will respond to. Further emergency response time performance service levels or Council-approved expectations are not stated. All these components would be included in a standard of cover or service level policy to support the Fire Services Bylaw.

Recommendation #1a: Update the existing Fire Services Bylaw to ensure the bylaw reflects a set level of service provided for all areas required based on legislation, risk, and circumstances.

Suggested completion: 6-12 months

Recommendation #1b: Establish Standard of Cover policy identifying the performance expectations (benchmark) for each level of service identified in an updated Fire Services bylaw.

Suggested completion: 1-12 months

Cost: Neutral

Resource: PCFS Administration

Rationale: *Developing formalized policy statements regarding fire department service levels is considered a leading practice. In the absence of established service levels, it is difficult for a fire chief to determine whether fire department response or service performance meets community and Council expectations. Further, the anticipated growth planned for the County will increase demand for services. Increases in service demands are correlated with increases in population and related risks such as increased traffic flow, building stock and community profile. Furthermore, a comprehensive emergency response and service level policy will confirm the essential core services for PCFS based upon statistical demands.*

2.14 Water Infrastructure

Water supply is a critical infrastructure essential for firefighting. Access to a reliable water delivery system is crucial for effective service delivery. Therefore, alternative water sources such as dry hydrants, tanks, reservoirs, rivers, and lake water must be preplanned.

The Capital Regional Parkland Water Services Commission, through EPCOR, provides water services to residents of Parkland County. Parkland county makes sure that the reservoirs are topped up so they can maintain residential water usage and firefighting water needs.

Parkland County is an active member of the West Inter Lake District (WILD) Water Commission—a regional partnership created to modernize and expand water supply infrastructure across several municipalities. This initiative is designed to ensure a reliable, high-quality potable water supply to urban, rural, and First Nation communities in the region. According to the PCFS a single line supplies the Parkland County reservoirs with potable water. Small leaks and maintenance have caused disruptions and water restrictions to the county.

There is a water shortage plan in place in the event of any water disruptions or low reservoirs located in the County. Water restriction or bans are triggered at various levels depending on the extent of the shortages. A full communications strategy is addressed as part of the plan.

Currently Parkland County has a total of five potable water reservoirs as described in the table below.

Table 19: Parkland County Water Reservoirs

Name	Location	Capacity (m3)	Fed by
Acheson Zone 3 Reservoir	27021 Ellis Road, Acheson	5000	CRPWSC
Acheson Zone 4 Reservoir	25607 Acheson Road, Acheson	9000	CRPWSC
Wabamun Lower Reservoir	5122 53 Street, Wabamun	500	WILD
Wabamun Upper Reservoir	North of highway 16	1000	Parkland County from lower reservoir
Entwistle Reservoir	4524 49 Street, Entwistle	1500	WILD

SECTION 3
DEPARTMENT PROFILE

3.1 Department Overview

The Parkland County Fire Services (PCFS) long and proud history dedicated to the safety of residents, business community and tourists of Parkland County. This year, surpassing 60 years as an organized fire department, PCFS continues to grow and mature to meet the increasing needs for fire protection and emergency services within Parkland County.

PCFS, like most modern fire departments has evolved into a critical component of their community's social safety net. Whereas early fire departments were historically established specifically to combat structure fires that, at the time, were often devastating. Today, fire departments are also called upon to respond to technical rescues, and dangerous goods releases, often working together with other response agencies. As a result, fire departments must be properly structured, adequately resourced and equipped to deliver these services safely and competently.

PCFS currently operates under the Parkland County Bylaw 2023-17, "*A Bylaw to Establish and Operate a Fire Department, the Prevention and Control of Fires, and Authorize the Recovery of Related Fees, Expenses and Charges*". Bylaw 2023-17 authorizes PCFS and contracted fire services to provide:

- Preventing and extinguishing fires.
- Investigating the cause of fires in accordance with the quality management plan approved by Council and the Safety Codes Council.
- Preserving life, property, and the environment, and protecting persons and property from injury or destruction by fire.
- Providing rescue services and medical first response
- Carrying out pre-fire planning and fire inspections in accordance with the quality management plan approved by Council and the Safety Codes Council.
- Enforcing provisions of the Safety Codes Act.
- Preventing prairie or running fires and enforcing the provisions of the Forest and Prairie Protection Act, RSA2000 c F-19.
- Fulfilling the requirements of any contracted services agreements with other municipalities.
- Assisting with emergency management.
- Providing public education and information regarding emergency preparedness and community safety.

- Controlling and mitigating Incidents involving Dangerous Goods; and.
- Establishing policy and guidelines for wildfire risk reduction, suppression, and post-fire reclamation in accordance with the policies and guidelines established by the County from time to time and all applicable legislation.

In addition to providing critical emergency services, PCFS also performs day-to-day non-emergency activities which include:

- Vehicle, apparatus, and equipment preventive maintenance inspections and testing
- Skills maintenance practice and training
- Fire hall preventative maintenance and upkeep

PCFS operates out of a four fire stations

- Acheson Fire Station – 11350 – 274 Street, Acheson
- Parkland Village Fire Station – 18, 53222 Range Road 272, Parkland Village
- Tomahawk Fire Station – 4902-50 Avenue, Tomahawk
- West Central Fire Station – 4820-52 Avenue, Wabamun

In addition, PCFS contracts fire and rescue services to designated areas within Parkland County through the following municipal fire service partners:

- Devon Fire Station – 9 Columbia Avenue, Devon
- Yellowhead County, Evansburg Fire Station – 4907 50 Street, Evansburg
- Stony Plain Fire Station – 4000-49 Avenue, Stony Plain

3.1.1 Mission and Vision

A mission statement declares concisely the purpose of an organization, why it exists and how it provides service. A vision statement offers insight into where the organization strives to be in the future. Values are the beliefs and principals that drive the organization forward.

A fire service may align with their municipality's mission and values or build upon those with fire service specific statements.

Parkland County Fire Rescue Services Mission Statement

Will be an exemplary model in the delivery of fire prevention, fire control and public safety services. We will be innovative, effective, and ethical; show excellence in our thinking, actions and behavior and work safely in all situations.

Parkland County Parkland Vision

Parkland County: gifted by nature, inspired by innovation, powerfully connected, and home to opportunity.

Parkland County Core Values

Parkland County promotes the following five values, which provide a foundation for a strong, vibrant, and sustainable community:

Service - We prioritize public service and community impact in every action we take.

Teamwork - We foster collaboration across departments to promote efficiency and innovation.

Attitude - We maintain a solution-focused mindset and approach change with resilience.

Respect - We uphold transparency, inclusion, and accountability in decision-making.

Safety - We create a safe and supportive environment for employees and the public.

3.1.2 Thematic Summary of Interviews and Survey Results

The Fire Services Master planning process was initiated by providing PCFS firefighters, fire administration and select Parkland County senior administration an opportunity to comment on numerous aspects of fire and rescue operations. Nineteen interview participants and 47 survey respondents provided responses to similar questions and constructive feedback. The following key themes emerged from this process:

Strengths

- All PCFS employees are committed to the service and proud of the service they provide to their communities.
- PCFS attracts good candidates for both full-time and POC firefighter positions.
- PCFS invests in their staff.
- Training programs are consistent with community needs and follow industry best practices.
- PCFS provides a wide level of services to the Parkland County.
- Apparatus and equipment are sufficient and well maintained.
- Fire stations are well maintained.

Weaknesses

- Lack of fulltime firefighters and rely heavily on POC firefighters and contracted services partners.
- Poor responses during normal work hours and high demand periods.
- Lack of resources to provide the necessary level of inspections, pre-incident planning and effective initial response force.
- Lack of practical training together with all fire stations and contracted services partners.

Challenges

- Educating the residents and business community within Parkland County have a better understanding of the services available and limitations.
- PCFS ability to keep up with the anticipated community and economic growth particularly in the Acheson Business Park.
- Long term reliance on contracted services partners.
- High level of career opportunities for career firefighters within the Edmonton Capital region pulling POC away from PCFS.
- Ensuring training attendance is monitored.
- Recruitment in rural areas of Parkland County will be challenging with anticipated retirements.
- Ensure effective communication flows through the entire organization.
- Stations located in Parkland Village and Tomahawk are wholly dependant on POC responders.

Opportunities

- Increase full-time staffing levels where demand warrants.
- Provide a higher level of risk reduction strategies including proactive fire inspections and pre-incident planning.
- Increase recognition programs to assist with retaining POC staff.
- Continue to improve on internal communication processes.

3.2 Staffing Resources

Whether full-time (career), volunteer (not paid) or POC; a fire department's employees are its most valuable asset. Emergency services are often delivered under difficult and stressful circumstances, with little room for error. Fire departments must be adequately resourced with staff, equipment, and training to be effective in delivering highly technical services to achieve service excellence. As a result, considerable effort is warranted to ensure that only highly committed, team-oriented, and physically able employees are recruited, trained, and retained.

An effective organizational structure must promote and support strong, effective leadership, sound business management and continuity, and effective communication with opportunities for staff development.

PCFS relies on competent and reliable emergency response from their contracted and contracted services fire service partners to defined districts within Parkland County. Contracts or Agreements are in place defining the obligations, compensation, and expectations of each party. These relationships emphasis the need for excellence in leadership, cooperation, and communication from all parties.

PCFS is classified as a composite department with a complement full-time career, casual, and paid-on-call (POC) members. PCFS provides fire and emergency services directly out of four (4) Parkland County fire stations and contracted fire service agreements with the Town of Devon, Yellowhead County, and Town of Stony Plain.

3.2.1 Staffing Complement

The PCFS administrative structure supports the evaluation, dispatch and delivery of emergency management, emergency services, and fire prevention to Parkland County and is led by the Fire Chief, along with three Deputy Fire Chiefs, an Emergency Preparedness Program Manager, and a Manager of Emergency Communications Services. The following make up the current full-time staffing complement for PCFS:

- Two Captains
- Three firefighters
- One Maintenance and Logistics Coordinator
- One Fire Prevention Officer
- One Fire Smart Coordinator
- Four Emergency Communications Lead Coordinators
- Eight Emergency Communications Operators
- Two part-time and three casual Emergency Communications Operators

The PCFS paid-on-call complement consists of:

- One Assistant Deputy Chief
- One Auxiliary Assistant Chief
- Two Platoon Chiefs
- Thirteen Captains
- Twelve Lieutenants
- One hundred and twenty firefighters

The PCFS POC firefighter complement is subject to change as these numbers can vary depending on recruitment and retention which are common challenges within a composite fire service which rely heavily on POC commitment.

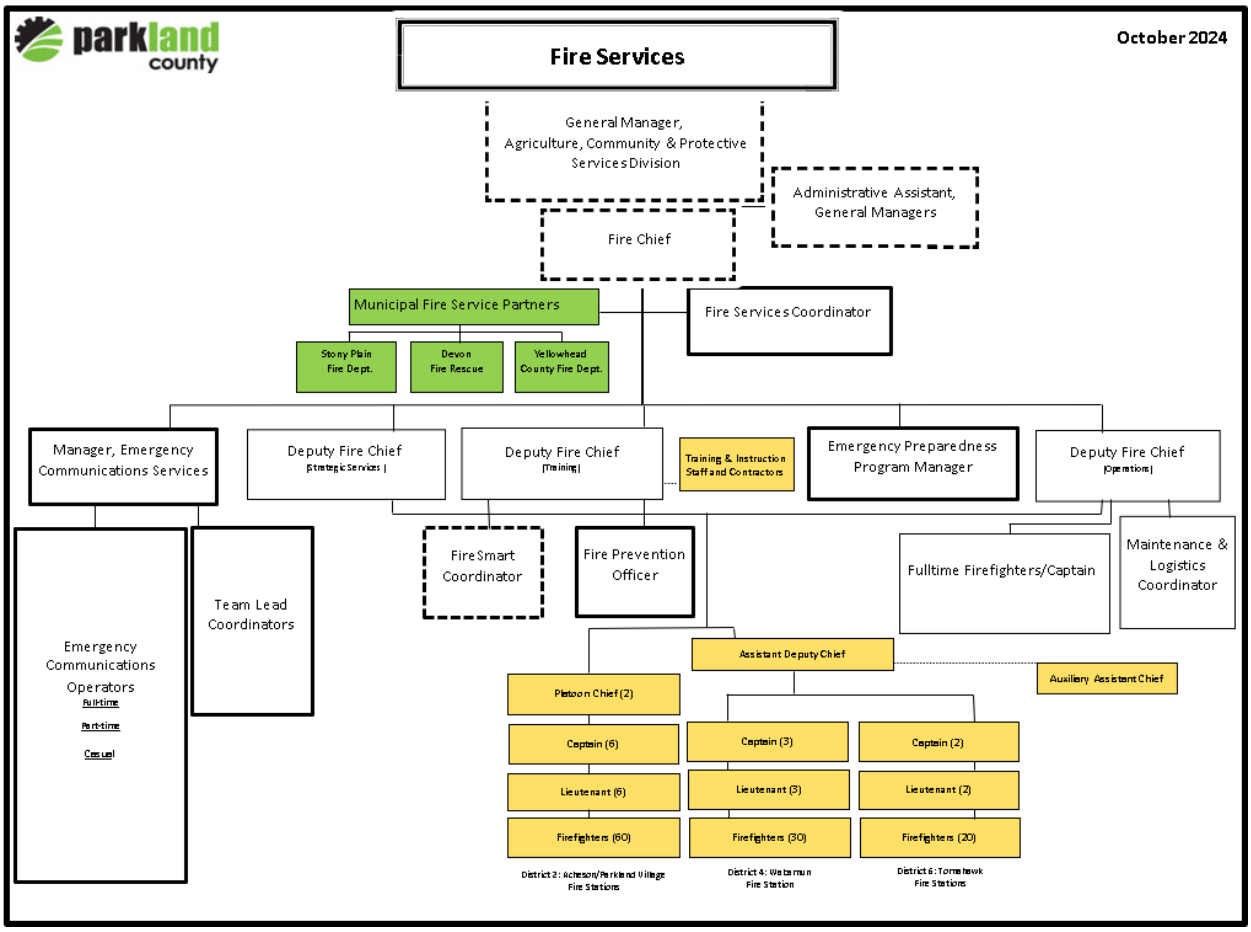
PCFS administration and full-time staff work a normal Monday to Friday, 08:00-16:30 work schedule operating out of the Acheson (Headquarters) and West Central Fire Stations. PFCS Chief Officers are also expected to be available to respond on an on-call rotation. PCFS POC staff are utilized for emergency response within their primary response district and additional response support as required, both when full-time staff are on duty and after normal hours, weekends, and holidays.

As stated above in 3.2, Parkland County has existing agreements with the Town of Stony Plain, Town of Devon, and Yellowhead County for emergency response into defined districts within Parkland County as follows:

- Stony Plain Fire Department – Response into District 3
- Devon Fire Department – Response into District 1
- Yellowhead County Fire Department (Evansburg) – Response into District 5

Responses into these districts are supported with PCFS resources from one or more of their fire stations as required. There is an Automatic Aid Agreement with the Spruce Grove Fire Services to respond into the Acheson Business community for structure fire emergencies in support of PCFS.

Chart 1: Parkland County Fire Services Organizational Chart (2024)



3.2.2 Department Leadership, Management and Operations

Effective leadership and management are paramount for an organization's success. Elected officials are tasked with ensuring the value of money spent on services for their citizens. Department managers are challenged to maintain or increase service levels while avoiding service cost increases. This fiscally driven environment creates the need for communities to adopt more business-like approaches to delivering public safety services. Managers of fire and emergency services, like all public service managers, are required to adopt private sector-like business practices such as:

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

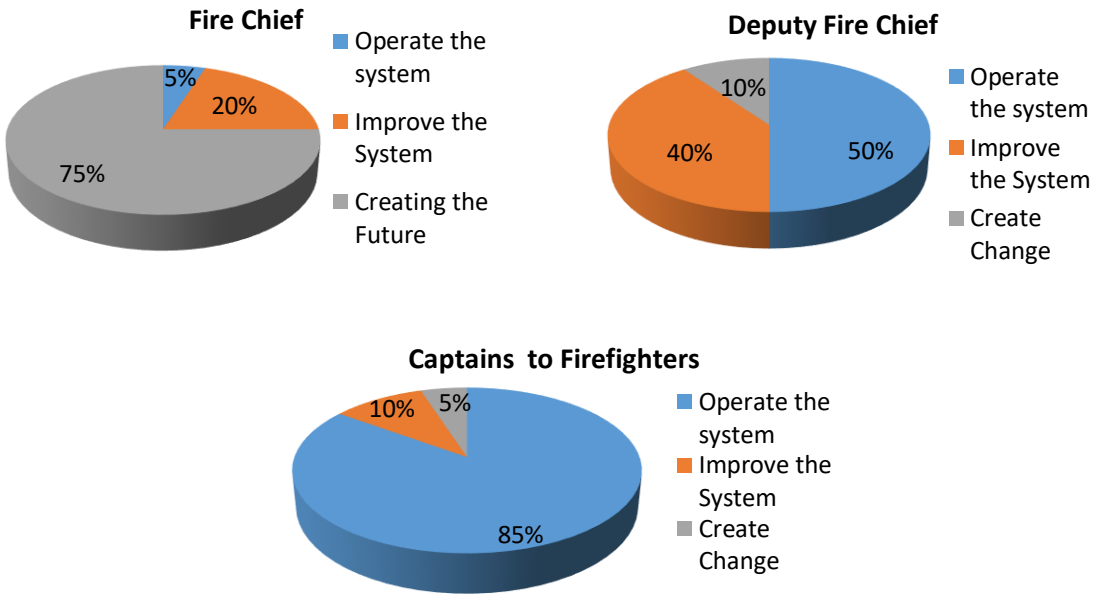
In some cases, this requires a shift from the historical approach of focusing on day-to-day service delivery, to scanning the future and working towards a department that is responsive to change, sustainable and makes efficient use of limited resources.

Fire department leaders must also adopt a more business-like approach to leading and managing their departments. In collaboration with their municipality's senior administration, fire department leaders need to be proactive and examine all aspects of their service delivery systems to look for innovative efficiencies and enhanced effectiveness.

The following image suggests an allocation of leadership time to effectively operate a fire department, scan for improvement opportunities and implement system improvements. Image 2 illustrates two important points:

1) the amount of time allocated to operating, improving, and identifying strategy varies at different levels in the organization
2) senior leadership positions must retain the capacity to identify long-term goals and implement change.

Image 2: Fire Service Time Management



The organization's leadership must work closely with the entire team. A highly functioning team understands each person's roles and responsibilities and brings skilled individuals together in a collaborative manner to lead the organization in achieving its values, mission, and vision. To promote role clarity and understanding of the overall structure of responsibility, accurate and updated job descriptions must be available.

Traits of a high-performing team include:

- Trust
- Strong communication
- Transparency
- Collaboration
- Support
- Clarity
- Adaptive
- Reflective

Leadership functions are often attributed to those positions within the administration; however, leadership is a function expected of all PCFS members to contribute to the environment required to achieve service excellence. Day-to-day station leadership and management is a shared responsibility between the chief officers and captains. These positions play a critical role in leading, managing, and mentoring firefighters. This role is crucial in ensuring firefighter practice is aligned with department policy, as well as being the critical link in the chain of command between firefighters and chief officers.

Observation #2: Currently, PCFS utilizes a leadership and reporting structure that is a combination of both career and paid-on-call services that would otherwise be stand-alone. This can often lead to inefficiency and confusion in roles within the organization.

Recommendation #2: Conduct a review of all leadership positions within PCFS with the goal of establishing the most effective reporting structure from the Fire Chief through to all staff.

Suggested completion: 6-12 months

Cost: Neutral

Resource: PCFS Administration

Rationale: *An effective organization must have clear position responsibilities, duties and reporting lines. PCFS utilizes reporting lines that separate the full-time and paid-on-call staff. This process can sometimes lead to inconsistency and operational ineffectiveness. A streamlined reporting structure would assist in providing consistency of practice throughout the organization.*

3.3 Job Descriptions

A job description is a physical narrative for a given job position that accurately describes the purpose of the position, including a general overview, key responsibilities and/or duties, and the required minimum and preferred qualifications. Hours of work, work conditions and compensation are typically included. It is important to review job descriptions on a regular basis and beneficial when a position is vacant and is to be filled. Accurate and current job descriptions are important to the organization, current and potential candidates including:

- Assists with organizing the hierarchy and structure of the organization
- Clarify expectations of each position
- Ensure qualified candidates apply
- Ensure current employees understand the full scope and expectations of their position
- Tool used in the process of succession planning for employees
- Foundational tool for performance management of current employees
- Assists with setting compensation and other benefits with similar JD's
- Assists with organization protection in cases of discipline or termination

3.3.1 PCFS Administration Positions

The following PCFS administration positions work primarily out of the Acheson fire station on a normal Monday to Friday day shift. The Fire Chief and Deputy Fire Chiefs are expected to respond to emergency situations as required during and after normal hours of work.

3.3.2 Fire Chief

Reporting to the General Manager, and Community and Development Services Division. The Fire Chief is a senior leadership position within Parkland County. Key responsibilities of the Fire Chief include:

- Directs Parkland County Fire Services, the leadership and management of all aspects of service delivery, including strategic leadership, administration, and supervision of operations in the delivery of Fire Services.
- Coordination of emergency management and preparedness within Parkland County.
- Responsible for the Deputy Fire Chiefs, fire service Agreements and POC firefighters in the delivery of emergency response services within Parkland County.

- Responsible for firefighting services provided by agreement from the Town of Devon, the Town of Stony Plain, Yellowhead County and Agreements for fire services provided to the Hamlet of Wabamun, and the Hamlet of Tomahawk.

3.3.3 Deputy Fire Chief Operations

Reporting to the Fire Chief. Key responsibilities of the Deputy Chief, Operations include:

- Responsible for the implementation and delivery of fire and rescue services within Parkland County.
- Responsible for the day-to-day operating requirements of Parkland County Fire Services.
- Coordinate equipment maintenance, replacement, and purchasing.
- Develop, implement, and maintain standard operating guidelines.
- Provide supervision and leadership, serve as a liaison between PCFS Fire Services and Employee Services.
- Provide emergency response services as required.

3.3.4 Deputy Fire Chief Training

Reporting to the Fire Chief. Key responsibilities of the Deputy Chief, Training include:

- Responsible for developing, implementing, and maintaining a firefighter training program to county and industrial standards. This includes directly delivering training, coordinating fire instructors for their delivery of training, and ensuring all training is scheduled.
- Maintaining the training records database.
- Analyze and make recommendations on program standards for paid-on-call firefighters
- Participate in Parkland County's Emergency Management Team and provides emergency response services as required.

3.3.5 Deputy Fire Chief Strategic Services

Reporting to the Fire Chief. Key responsibilities of the Deputy Chief, Strategic Services include:

- Oversees the administration of the business planning, budget development, and technology strategy for the Fire Services Department within Parkland County.
- Responsible for the measurement and reporting of key performance indicators for fire services, and the use of technology solutions to enhance services across the department.

- Responsible for assisting in the day-to-day administration, training, and operational requirements of Parkland County Fire Services. This includes, but is not limited to, equipment maintenance, replacement and purchasing; the development, implementation, and maintenance of standard operating guidelines; and providing emergency response services as required.

3.3.6 Fire Services Coordinator

Under the general supervision of the Fire Chief. This position works primarily from the Acheson fire station on a normal Monday to Friday day shift work schedule. Key responsibilities of the Fire Service Coordinator position include:

- Provides support and administrative services for Fire Services.
- Aids in fire and emergency services programs, projects, and initiatives such as department invoicing and accounts receivable, staff scheduling, staff appreciation, event planning, and special project work.
- Maintain a tactful service-oriented relationship with the general public, fire service partners and external agencies.
- Fire and Emergency Communications Centre administrative support.
- Paid-on-call staff appreciation program and Department events.
- Other duties as assigned.

3.4 PCFS Full -time Positions

3.4.1 Fire Prevention Officer

Reports to the Deputy Fire Chief, Training. This position works out of the Acheson fire station on a normal Monday to Friday day shift work schedule. Key responsibilities of the Fire Prevention Officer include:

- Responsible for the operational delivery of the Fire Quality Management Plan.
- Leads and supervises the life safety program and coordinates a team of paid-on-call Safety Codes Officers to conduct preliminary plan and document reviews prior to development/permit approval.
- Inspect businesses for their compliance with the National Fire Code (Alberta Edition) Regulations.
- Investigate reportable fires.
- Ensure the completion of written inspection and investigation reports and data entry in the fire services records management system.
- Acts as a key liaison to industry, the public and County staff.
- Provide emergency response services and other duties as required.

3.4.2 Captain

Reporting to the Deputy Fire Chief, Operations. One of these positions is assigned to the Acheson Fire Station and one assigned to the West Central Fire Station. Both these positions work a normal Monday to Friday day shift work schedule. Key responsibilities of the captain positions include:

- A First responder who routinely responds to emergency incidents such as, but not limited to: fires, medical first responses, motor vehicle incidents, alarm calls, hazardous material incidents, water incidents, rescue incidents and rail incidents.
- Assisting in the day-to-day administration, training, and operational requirements of Parkland County Fire Services including the direct supervision of firefighters.
- Participate in regular training, public education, preventative maintenance.
- Other duties as required.

3.4.3 Firefighter -Full-time

Reports to the Captain (Fulltime). One of these positions is assigned to the Acheson Fire Station and two are assigned to the West Central Fire Station. All these positions work a normal Monday to Friday day shift work schedule.

Key responsibilities of the full-time firefighter include:

- Performs the duties and services provided by Parkland County Fire Services.
- A First responder who routinely responds to emergency incidents such as, but not limited to: fires, medical first responses, motor vehicle incidents, alarm calls, hazardous material incidents, water incidents, rescue incidents and rail incidents.
- Participates in regular training, public education, preventative maintenance, and other duties as required.
- Performs other duties as assigned.

3.4.4 Maintenance and Logistics Coordinator

Reports to the Deputy Fire Chief-Operations. This position is assigned to the Acheson fire station and works a Monday to Thursday dayshift position. Key responsibilities of the Maintenance and Logistics Coordinator include:

- Coordinates the day-to-day operations of Parkland County Fire Service's equipment, vehicle maintenance and repairs and Personal Protective Equipment (PPE).

- Coordinates acquisitions and distribution of parts, supplies, and PPE to the fire stations.
- Purchase agreements in coordination with Procurement Services.
- Provide emergency response services and other duties as required.
- This position currently provides operational capacity for Acheson fire station as the driver/operator of the full-time dayshift.

3.5 PCFS Paid-on-Call Positions

3.5.1 Auxiliary Assistant Chief

Under the direction of the Fire Chief and Deputy Fire Chiefs. Key responsibilities of the Auxiliary Assistant Chief include:

- Has no supervisory responsibilities
- Participate in open houses and fire prevention events.
- Conduct Fire Smart activities.
- Non-emergent response to the station to support crews. (upon request)
- Adhere to all orders, rules, regulations, and Standard Operating Guidelines.
- Attends weekly training and other training functions as required (in an administrative capacity only).
- Participate in regular officers' meetings.
- Provide logistical support for longer incidents.
- Performs other related duties as required.

3.5.2 Assistant Deputy Chief

Under the direction of Deputy Chief of Operations. Key responsibilities include:

- A paid-on-call first responder.
- Responds to emergency incidents such as, but not limited to fires, medical first responses, motor vehicle incidents, alarm calls, hazardous material incidents, water incidents, rescue incidents and rail incidents.
- Supervise a crew made up of captains, lieutenant(s) and firefighters while being assigned duties for several areas of the operation of the district.

3.5.3 Paid-on-Call Captain

Under the direction of the Station Captain. These positions are assigned to one of the PCFS fire stations and expected to respond when able. Key responsibilities of the Paid-on-Call Captain include:

- A paid-on-call first responder.
- Responds to emergency incidents such as, but not limited to fires, medical first responses, motor vehicle incidents, alarm calls, hazardous material incidents, water incidents, rescue incidents and rail incidents.
- Supervise a crew made up of lieutenant(s) and firefighters while being assigned duties for several areas of the operation of the district.

3.5.4 POC Lieutenant

Under the direction of the Captains and Chief Officers. These positions are assigned to one of the PCFS fire stations and expected to respond when able. Key responsibilities of the POC Lieutenant include:

- A paid-on-call first responder who responds to emergency incidents such as, but not limited to: fires, medical first responses, motor vehicle incidents, alarm calls, hazardous material incidents, water incidents, rescue incidents and rail incidents.
- Assist the captain in the supervision of a crew made up of firefighters while being assigned duties for several areas of the operation of the district.
- Fire station and apparatus checks and maintenance.
- Performs other duties as assigned.

3.5.5 Casual Firefighter

Reporting to the Captain (Fulltime). These positions are assigned to one of the PCFS fire stations and expected to respond when able. Key responsibilities of the Casual Firefighter include:

- Performing the duties and services provided by Parkland County Fire Services.
- A first responder who routinely responds to emergency incidents such as, but not limited to: fires, medical first responses, motor vehicle incidents, alarm calls, hazardous material incidents, water incidents, rescue incidents and rail incidents.
- Participate in regular training, public education, preventative maintenance.
- Fire station and apparatus checks and maintenance.
- Fire inspections/investigations and public education.

- Maintain attendance levels as per SOG.
- Performs other duties as assigned.

3.6 Emergency Communications Centre Positions

3.6.1 Manager, Emergency Communications Centre

Under the direction of the Fire Chief, the Manager, Emergency Communications Centre. Key responsibilities of the Manager, Emergency Communications Centre include:

- Provides oversight of all departmental programs and activities.
- Provide direct supervision to Team Lead Coordinators and provides leadership and guidance to Emergency Communications Operators.
- Ensuring the department provides excellent customer service to all stakeholders.
- Provides technical support to resolve issues.
- Responsible for creating and maintain the departmental budget, business plans and goals and reports to senior management and Council on Emergency Communications related issues or activity.

3.6.2 Team Lead Coordinator

Reporting to the Manager, Emergency Communications Services. Key responsibilities of the Team Lead Coordinator include:

- Overseeing the daily operations of the Emergency Communication Centre (ECC).
- Responsible to perform all of the daily duties according to the Emergency Communications Operator position.
- Provides positive training and mentorship direction to the ECC staff.
- Coordinates and maintains equipment and software requirements.
- Liaises with external agency contracts and makes recommendations for best business practices for the ECC.

3.6.3 Emergency Communications Operator

Reports to the Team Lead Coordinator. This position description includes full-time, part-time, and casual. Key responsibilities of the Emergency Communications Operator include:

- Responsible for receiving and evaluating all incoming telephone calls to the Emergency Communications Centre (ECC) to determine the service required to ensure each caller is routed to the appropriate emergency service agency.
- Provide services to those agencies under the dispatch arm of the call centre and monitor progression of calls to ensure an efficient emergency response.

3.6.4 Emergency Preparedness Positions

The Parkland County Emergency Preparedness program currently reports to the Emergency Preparedness Program Manager up through to the PCFS Fire Chief.

3.7 Policies, Standard Operating Guidelines and Procedures

Comprehensive policies along with standard operating guidelines (SOGs) and standard operating procedures (SOPs) are essential components of any organization. Formal, written policies and procedures establish consistent expectations and practices focusing on safety and effectiveness throughout the organization. Policies, procedures, and guidelines are often tied to the organization or municipal Values, Vision, and Mission.

Emergency response is dynamic in nature where firefighters need to make split-second decisions to protect the lives of the public and their fellow responders. Therefore, the safe and effective operation of the fire service must have an industry-specific set of policies, procedures, and guidelines. Policies will outline expectations while procedures are the accepted ways of adhering to these policies.

All approved policies, procedures and guidelines should be contained in a single fire department manual, easily accessible to all members of the organization with accountability checks in place, regularly scheduled reviews and updates to policies, procedures and guidelines should be a common practice in an organization.

3.7.1 Policies

Fire department policies are guiding principles which set expectations and guide all members of the organization. They represent the philosophy and expected conduct standards. Typical policy wording would include “all members shall” or “shall not”, which clearly define expectations and provide consistency in practice.

3.7.2 Standard Operating Procedures

Fire department standard operating procedures (SOP) assist all members in knowing how to act and re-act in day-to-day situations. Procedures are not meant to limit the ability of on-scene personnel to make decisions but rather allow a degree of flexibility in their decision-making process. When every firefighter is following the same SOPs, they communicate effectively and work efficiently as a team. This improves accountability and the safety of the public and first responders.

3.7.3 Standard Operating Guidelines

Fire department standard operating guidelines (SOG) provide a foundation of best practices and are subject to situational interpretation based on approved policies and procedures. Guidelines allow for flexibility in the application of a procedure as the situation dictates while staying consistent with policy or procedure.

PCFS operates under departmental SOGs focusing on General Administrative, Training, and General Safety. Interview and survey results suggest that the majority of PCFS's current standard policies and operational guidelines are reflective of fire-rescue industry best practices.

3.8 Parkland County Partnerships and Agreements

3.8.1 Agreements for Contracted services Firefighting Services

Agreement between the Town of Stony Plain, the City of Spruce Grove and Parkland County to aid each other in the event of a fire, other peacetime disaster, or emergency within the corporate boundaries of either of the municipalities. Signed July 6, 2007.

3.8.2 Memorandum of Agreement Between Parkland County and Town of Stony Plain

Agreement between Parkland County and the Town of Stony Plain to collaborate the provision of fire service delivery in an area of Parkland County. This Agreement is intended to ensure operational costs with the delivery of fire services by Stony Plain Fire Department to District 3 of Parkland County is shared in a fair and equitable manner. Signed October 1, 2018.

3.8.3 Memorandum of Agreement Between Parkland County and Town of Devon

Agreement between Parkland County and the Town of Devon to collaborate the provision of fire service delivery in an area of Parkland County. This Agreement is intended to ensure operational costs with the delivery of fire services by the Devon Fire Department to District 1 of Parkland County is shared in a fair and equitable manner. Signed December 18, 2018.

3.8.4 Yellowhead County Fire Services Agreement

Agreement between Parkland County and Yellowhead County to collaborate the provision of fire service delivery in an area of Parkland County. This Agreement is intended to ensure operational costs with the delivery of fire services by Yellowhead County (Evansburg Fire Station) to District 5 of Parkland County is shared in a fair and equitable manner. Signed December 1, 2016.

3.8.5 Contracted services Agreement – Enoch Cree Nation #440

An Agreement between Parkland County and Enoch Cree Nation #440 to provide fire protection assistance to the other party when requested. Signed March 21, 2023.

3.8.6 Brazeau County Contracted services

An Agreement between Parkland County and Brazeau County to provide emergency response assistance to the other party when requested. Signed April 12, 2019.

3.8.7 Summer Village of Betula Beach Memorandum of Agreement

An Agreement between Parkland County and the Summer Village of Betula Beach for Parkland County Fire Services to provide fire and rescue services to the identified service area within the Summer Village of Betula Beach. Signed April 1, 2021.

3.8.8 Summer Village of Kapasiwin Memorandum of Agreement

An Agreement between Parkland County and the Summer Village of Kapasiwin for Parkland County Fire Services to provide fire suppression and rescue services to the identified service area within the Summer Village of Kapasiwin. Signed April 1, 2021.

3.8.9 Summer Village of Lakeview Fire Services Agreement

An Agreement between Parkland County and the Summer Village of Lakeview for Parkland County Fire Services to provide fire and rescue services to the identified service area within the Summer Village of Lakeview. Signed April 1, 2021.

3.8.10 Summer Village of Point Alison Fire Services Agreement

An Agreement between Parkland County and the Summer Village of Point Alison for Parkland County Fire Services to provide fire and rescue services to the identified service area within the Summer Village of Alison. Signed April 1, 2021.

3.8.11 Summer Village of Seba Beach Fire Services Agreement

An Agreement between Parkland County and the Summer Village of Seba Beach for Parkland County Fire Services to provide fire and rescue services to the identified service area within the Summer Village of Seba Beach. Signed April 1, 2021.

3.8.12 Summer Village of Spring Lake Fire Services Agreement

An Agreement between Parkland County and the Village of Spring Lake for Parkland County Fire Services to provide fire and rescue services to the identified service area within the Village of Spring Lake. Signed April 1, 2021.

3.8.13 City of Edmonton Poundmaker Facility Use Agreement

An Agreement between Parkland County and the City of Edmonton for Parkland County Fire Services to utilize the Edmonton Fire Rescue Training Facility in accordance with the terms and conditions of this Agreement. Signed May 18, 2020.

Observation #3: The Parkland County Fire Services relies on partnership agreements with neighbouring fire departments to provide effective fire and emergency response to identified fire districts within Parkland County, including:

- Stony Plain
- Devon
- Yellowhead County

Some contracts follow a 'cost sharing' model, where direct and/or indirect costs to the contracted service are shared to some degree. Interviews were conducted with chief officers from each of the contracted fire services. During the interviews, a number of themes emerged:

- All felt that the level of service being provided was meeting the needs of the community and consistent of requirements under the current agreements.
- All agreements appear in need of updates, or revisions to reflect the changes in today's environment.
- The need to ensure more open communications between departments occur and that regular meetings are scheduled for the sharing of information that impacts current and future needs of emergency response, fire protection and fire ground operations.
- It was felt that all parties explore opportunities for joint training initiatives to improve the effectiveness on the fireground and build stronger relationships amongst the frontline staff.
- The communications between parties appear to be reactive vs proactive and has caused some minor friction between the partners.

All interviewees indicated the need to ensure that any operations, procedures, or budget changes that have a direct effect on the other party in respect to the current contract must be communicated for discussion prior to implementing such changes.

Recommendation #3a: Establish regular and timely meetings between all parties. These meetings are intended to discuss any issues, challenges or opportunities prior to implementation that continues to ensure the smooth delivery of emergency services consistent with each contract.

Reference: Section 3.8 Parkland County Partnerships and Agreements, Pg. 57

Suggested completion: 12-24 months

Cost: Neutral.

Resource: Administrative time.

Rationale #3a: *Each party must honor and respect all provisions of the current contract in place. Effective and regular communication processes will provide opportunity for each party the opportunity to discuss issues that may impact the current Agreement(s).*

Recommendation #3b: As contracts become up for review, both parties explore the advantage, disadvantages, challenges, and opportunities of both the current cost sharing model and that of a fee for service model.

Reference: Section 3.8 Parkland County Partnerships and Agreements, Pg. 57

Suggested completion: 12-24 months

Cost: Cost dependant on review of existing agreements

Resource: Administrative time.

Rationale #3b: *With the goal of developing contracts that satisfy the needs of all parties, an open discussion on the advantages, disadvantages, challenges, and opportunities of the current cost sharing model as well as a fee for service model should be explored.*

3.9 Remuneration, Recruitment, Selection, Retention, Advancement, Promotion

The recruitment, retention, and professional growth of personnel is a key function of all emergency service agencies. PCFS maintains a high value on all department staff and supports individual employee growth and development. The community places a tremendous amount of faith in fire personnel, trusting them to provide the highest level of service when the public is most vulnerable. As such, an open, fair, and competitive process should be used for personnel selection, renumeration and continuing education for all personnel.

3.9.1 Remuneration

The full-time, casual, and paid-on-call firefighters are not unionized. All working conditions and compensation set through Parkland County Council and PCFS policy. A fair and equitable compensation package comparable to like positions within the capital region is important considerations for recruitment, retention, and position satisfaction of existing members.

3.9.2 Recruitment

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 of the fire service. The expected compensation package, requirements for residency, required training, and attendance must be clearly explained early in the process. Existing staff should be encouraged to participate in any such campaign.

PCFS, like other fire services in North America, train, maintain, and equip their officers, firefighters, training, and fire prevention/inspection personnel to the recognized NFPA standards for the services being delivered. As this requires substantial investment in both financial and resource commitments, recruit selection should be carefully managed. The current need for firefighters in the capital region and beyond adds to the investment-benefit dilemma of recruiting new members that will hopefully provide a strong commitment to PCFS.

The process for recruiting applicants for vacant full-time positions is established. Job postings including minimum requirements and process are listed on the Parkland County website. The past and current practice is to strongly consider applicants from the POC work force for any full-time firefighter vacancies. This practice has worked well for the organization allowing the administration to have a reliable insight into the qualifications and suitability for future full-time employees.

POC firefighter opportunities are regularly posted on the municipal website supporting an annual County wide recruitment process. Applicants are required to forward a completed an on-line application to the administration in person or by mail for consideration.

3.9.3 Selection and Training of New Staff

Fire service positions are valued opportunities that often generate large interest when vacancies are posted. In general, career firefighter positions are filled by candidates who will spend their entire working career with a single fire department. As such, experience within the emergency services industry has shown that relaxing the requirements for entry-level positions is not a wise course of action for recruiting employees.

Paid-on-call (POC) firefighter positions provide a highly valued service to their respective community where the demand for fulltime firefighters is not warranted. POC firefighters often require comprehensive and continuous investment in each person to ensure that they possess the necessary competencies expected to safely perform their roll. The selection and investment are weighed against the ability to recruit and retain sufficient POC firefighters.

Most departments achieve excellence in service delivery with the application of qualified individuals who meet operational standards. Therefore, minimum qualifications should be high, and expectations should be well-defined. It is also helpful to have a comprehensive recruiting package which clearly outlines the requirements and process expectations of each position.

3.9.4 Retention

Career full-time employee retention is not generally an issue for most career fire services. Retirement, promotions, and attrition are the most common reasons for vacancies. Unanticipated retirements or resignations can result in significant challenges to maintain a sufficient pool of staff in each position that impacts service delivery and budgets.

A significant challenge however is prevalent in many fire services that depend on a reliable complement of volunteer or POC firefighters. PCFS has an approved roster of 151 POC officers and firefighters, but their actual number is hovering around 106. The primary reasons for resignation from a POC firefighter service include:

- A physical move of residence or workplace out of the municipality
- Career/primary work demands
- Family commitments and childcare
- Obtain a career firefighter position
- Increased training demands of the position up to NFPA 1001 and other requirements
- Increased demands on department time obligations
- Occupational and safety requirements

A fire service that has a constant turnover of trained firefighters results in staffing shortages, operational limitations, experience, and increased costs of recruitment and training.

Observation #4: PCFS continues to struggle with retaining their paid-on call (casual) firefighters to the level necessary. PCFS relies heavily on their paid-on call firefighters to provide effective emergency response. Considerable investment in time and money is invested in each firefighter with the hope that each is able to be long standing members of Parkland County Fire Services. This is a common issue with many fire services throughout North America that rely on maintaining a consistent number of paid-on-call firefighters available to respond when requested.

Recommendation #4: PCFS explore and pursue opportunities to increase the retention of paid-on-call firefighters.

Suggested completion: 12 – 24 months

Rationale: *Enhancing mechanisms to retain these highly trained and valuable resources will provide operational and budgetary efficiencies for PCFS and the Parkland County. The ever-increasing demands for necessary training and emergency response places a high demand on their time and personal life. Many fire departments and organizations are learning from each others experience and pursuing opportunities to enhance the retention of these highly trained and valuable resources.*

Examples include tax credits, improved compensation, and inclusion of a benefit package. Recognition of their valuable service by their community is a major contributor to their job satisfaction and retention. This initiative should explore incentives to the main employers of these firefighters, such as tax incentives and community recognition

3.9.5 Advancement and Promotion

The promotional policy for administrative and full-time officer positions is filled with specific selection and appointment processes. Promotion eligibility up from probationary firefighter to officer positions is contained in PCFS policy. Vacancies and promotional opportunities are posted internally for the consideration of all PCFS employees. Postings contain the expectations of the position, minimum qualifications, and other requirements of the position.

The Fire Chief and Deputy Chief(s) working together with Parkland County Employee Services review all applicants for promotion and the successful applicant shall be chosen based on the applicant's experience, workplace record, training record, and any tests and interviews as may be required by the Fire Chief. As stated earlier in this report, individual job descriptions for each of the PCFS positions that outline the purpose, responsibilities, qualifications, knowledge, and skills for consideration should provide the basis for promotion or advancement.

Each position subject to the promotional process requires eligible candidates to submit their interest to the Fire Chief, participate in the written exam, oral exam, and presentation as determined by the Fire Chief. Final selection for each position will be made by the Fire Chief. Each promotion is subject to the terms of the promotional policy and is subject to a six-month probationary period.

3.10 Training and Professional Development

3.10.1 Training Overview

Training and competency development are essential and ongoing activities for all contemporary fire departments. 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.

PCFS training programs are based on NFPA or industry recognized standards, pursuing certifications where possible. Training and education program activities are identified by assessing the knowledge, skills, and abilities (KSA) needed for firefighters to perform duties as outlined in the department's SOGs and Procedures. Additionally, Alberta Occupational Health and Safety (AOHS) has increased the formal requirements for training and maintaining records of that training for compliance with AOHS 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.

The training program of a fire service is a very important and demanding portfolio. The scheduling of instructors, facilities and participants is a daunting task to ensure safe and consistent training, while not negatively impacting the operational capacity of the service.

Typical training and qualification programs include:

- Officer development
- Incident command
- Fire ground safety
- Driver/operator
- Technical rescue
- Dangerous goods
- OHS
- WHMIS
- Firefighter core competency
- Inspections
- Investigations

The task of identifying, delivering, and tracking all required training while balancing the operational needs and readiness is a large portfolio. Close coordination with instructors, operational duty chiefs, station captains and vehicle mechanical services staff is required to ensure minimal impact to service delivery while meeting identified priorities.

The Deputy Chief, Training is specifically mandated with the responsibility of the development and coordinated delivery of all necessary training for personnel. This is a shared responsibility of chief officers and individual platoon/station officers.

PCFS delivers training through a combination of:

- On-shift station-based training based on job performance requirements (JPR's)
- Practical training nights
- On-line training programs

Training objectives focus on developing and maintaining core competencies including training requirements that target unique risks within each of the areas of Parkland County. PCFS has developed quarterly training objectives and schedules that fall primarily to each station captain to complete.

3.10.2 Training Facilities

Each of the PCFS fire stations have space dedicated or shared to providing a training environment within the building including instructor lead, eLearning, group sessions, incident reviews and other classroom activities.

Practical training and exercises are typically provided adjacent to each fire station on the ramp or parking area. Practical training evolutions may take the staff into areas in the County that provide a suitable environment.

Hands-on training of all firefighters is a requirement under the Alberta OHS that must ensure core skill education and maintenance is conducted, tracked, and maintained. New POC firefighters are handed over to their assigned fire station after their initial training and further developed by officers and trainers of each fire station.

Hands-on training practices are typically done ad hoc set-up at the respective designated training nights for each fire station. There is very limited opportunity for consistent and joint hands-on training.

Required live-fire training for recruits and existing necessitates the use of either the Spruce Grove or Edmonton training facility.

Observation #5: Parkland County does not have a dedicated fire training facility and utilizes the City of Spruce Grove or the City of Edmonton Training facilities for recruit training, core competency and live fire training. These facilities often have limited availability and requires taking staff and equipment outside the PCFS response zones.

Recommendation #5: PCFS explore the feasibility of a multi-jurisdictional training facility to provide live fire and specialized technical training programs.

Suggested completion: 36-72 months

Cost: TBD dependant on scope and size required. Commercial construction ranges between $180 to $275 per square foot.

Resource: Utilize the Alberta Intermunicipal Collaboration Frameworks with Spruce Grove and Stony Plain

Rationale: *Practical training, including live fire training is a necessary requirement under the Alberta OHS. This training is required by all staff that provides the service and must be completed as identified and is usually annually. Availability to utilize neighbouring centres, rental costs, and the need to travel outside the municipality are constraints that are faced by fire services. The benefits of a dedicated training facility will allow training to be conducted within the municipality and scheduled when it is ideal for Parkland crews. There are opportunities to explore varies provincial grant funding to assist in offsetting costs.*

3.10.3 Industry Recommended Qualifications

NFPA certification standards represent industry leading practices. However, the following list may not apply to all fire departments. The qualifications required for specific positions vary depending on identified community risks and services provided to manage the risks. Position profiles and associated KSAs should prepare staff to competently provide the services necessary to address the risks in their community.

Furthermore, organizational size and structure will often change the scope of tasks and competencies required by specific positions. For example, large full-time paid fire departments tend to have a higher degree of specialization for senior positions and less need for senior officers to be directly involved in fire suppression or rescue operations. In contrast, smaller volunteer or paid-on-call department senior officers will lead or be directly involved in fire suppression and rescue operations.

The following is a list of common NFPA standards offered as a general guideline that aligns with most fire department positions:

- NFPA 472: Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents
- NFPA 1001: Standard for Fire Fighter Professional Qualifications
- NFPA 1002: Standard for Fire Apparatus Driver/Operator Professional Qualifications
- NFPA 1021: Standard for Fire Officer Professional Qualifications
- NFPA 1031: Standard for Professional Qualifications for Fire Inspector and Plan Examiner
- NFPA 1033: Standard for Professional Qualifications for Fire Investigator
- NFPA 1035: Standard on Fire and Life Safety Educator, Public Information Officer, Youth Firesetter Intervention Specialist and Youth Firesetter Program Manager Professional Qualifications
- NFPA 1037: Standard on Fire Marshal Professional Qualifications
- NFPA 1041: Standard for Fire and Emergency Services Instructor Professional Qualifications
- NFPA 1140: Standard for Wildland Fire Protection
- NFPA 1072: Standard for Hazardous Materials/Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications
- NFPA 1403: Standard on Live Fire Training Evolutions
- NFPA 1521: Standard for Fire Department Safety Officer Professional Qualifications

3.11 Command Structure

Effective emergency scenes follow an established command structure for effective operations and scene safety. Utilizing a recognized command system allows for:

- Identifying lead agency (fire, police, other)
- Span-of-control of all resources
- Interoperability with responding agencies
- Defined objectives and benchmarks
- Consistent communication protocols
- Enhancing overall scene safety

PCFS utilizes the industry-recognized Blue Card Command[15] system. This command structure can be expanded or retracted based on the needs of the emergency and can integrate easily into other command processes, as necessary. All PCFS personnel as well as contracted services are trained on this command system, and it is utilized at all emergencies.

3.12 Fire Prevention and Code Enforcement

3.12.1 Fire Prevention Services Overview

As departments increase their emphasis on fire prevention activities, communities experience a significant reduction in fire-related losses. 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.

Parkland County is an accredited agency under the Alberta Safety Codes Act in the fire discipline and have established a Quality Management Plan (QMP) to guide their fire prevention program. The PCFS Fire Prevention Officer as well as all administrative staff are Fire Safety Code Officers (SCOs). PCFS relies on their dedicated Fire Prevention Officer along with available operational on-shift staff to conduct the wide scope of fire prevention duties. The Safety Codes Act and the fire discipline QMP program is discussed further in Section 2.

[15] *Blue Card - Firefighting Incident Command Training & Continuing Education*

3.12.2 Fire Code Inspection and Enforcement

Modern building codes including life-safety design and operating requirements are key components of risk management. The National Building Code-2019 Alberta Edition, NBC(AE) and the National Fire Code (NFC (AE) 2019) are based upon the National Model Building and Fire Code of Canada. The Alberta Codes set out the technical provisions regulating activities related to:

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

The NFC (AE) 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 NFC (AE). The NFC (AE) does not legislate the frequency of or cycle for fire inspections as this is left to the Authority Having Jurisdiction (AHJ). In all cases, it is the property owner's responsibility to comply with the National and Provincial Building and Fire Code Codes.

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.

Parkland County has a significant number of major manufacturing, agricultural and distribution facilities, particularly in the Acheson Business Park. Advantages for business owners to locate into the County has resulted in continued growth demands for the area.

The current QMP for Parkland County is based on the frequency of fire inspections to be on request or complaint only. This process limits the access of PCFS SCOs to properties that should be inspected. The PCFS QMP performs building and occupancy inspections in the County on request or complaint basis. All 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 fire preplanning.

Interviews and discussions with PCFS safety code and management staff indicate the ability to obtain current building inventories and conduct regular fire inspections of properties under Parkland County's Quality Management Plan is a significant concern.

Regular fire inspections by local fire department personnel are optimal opportunities for fire service professionals to visit occupancies and provide valuable assistance with general fire prevention education, emergency planning assistance as well as developing an ongoing relationships within their community.

Effective fire inspection/education programs are aimed at reducing the risk of fires and ensuring the safety of people and property. These processes can prevent catastrophic losses, maintain business continuity, and ensure compliance with legal and insurance requirements. These programs place a high demand on fire department resources.

Observation #6: The current Parkland County QMP limits fire inspections to request or complaint which limits the PCFS Safety Codes Officers ability to visit individual occupancies to ensure fire safety requirements and best fire protection and life safety practices are continuing. Implementing a cyclical fire inspection process with outlines frequency and resource requirements of each occupancy will assist the effectiveness of PCFS Safety Codes officers.

Recommendation #6: In addition to maintaining the current QMP, PCFS phase in a proactive risk-based fire inspection program for industrial and higher risk occupancy properties. PCFS must complete a comprehensive evaluation of the number and occupancy type of all inspectable properties within the County including the anticipated resource requirements for their Safety Codes officers.

Reference: Section 3.12.2 Fire Code Inspection and Enforcement, Pg.705

Suggested completion: 12-48 months

Cost: TBD depending on a staff needs assessment

Resource: PCFS Operating budget

Rationale: *Cyclical inspections of high risk industrial and commercial businesses as well as high occupancy properties will help ensure necessary life safety equipment and systems are installed and maintained. These inspections are an optimal time to help with fire and emergency planning and education. Interviews with a couple of businesses within the Acheson Business Park indicated that they welcome the fire service to come on site and provide valuable advice for fire prevention and emergency planning.*

This process will help to ensure life-safety equipment and system requirements are maintained throughout the operation of a high life-safety risk property. Regular inspections allow for an increased presence of the fire department with businesses within their response area and provide opportunities to foster mutually beneficial relationships to increase fire safety within the community. 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 the Fire SCO's. If implemented, it will require additional capacity and effort by PCFS staff to maintain this robust inspection and pre-planning program. Additional staff of dedicated employees may be necessary in order to provide the capacity, depending on the needs assessment of the QMP.

3.12.3 New Developments Plans Review

Working with Parkland County's Planning and Development Services, the Fire Chief or designate is involved in the development and construction review of all building and site plans to ensure the construction process complies with the fire code requirements. Establishing a formal review policy is discussed further in Section 2.

New developments within Parkland County including new construction, altering an existing one or change how the property is to be used are required to apply for a development permit. This requirement applies to all residential, industrial, and recreational properties. Approval of this permit and obtaining the necessary safety code permits is necessary to proceed. The County website refers to Building, Electrical, Gas, Plumbing and private Sewage permits.

Observation #7: PCFS does not have an accurate inventory of building stock within Parkland County.

Recommendation #7: Parkland County Fire Services work together with Parkland County Planning and Development Services to determine an accurate building inventory including building occupancy types.

Suggested completion: 6-12 months

Cost: Neutral, Operating budget

Resource: Administration time

Rationale: *A complete inventory of the building stock within Parkland County is necessary to allow PCFS to develop an effective inspection program.*

Observation #8: There is no specific reference to fire requirements under the Alberta Safety Code Requirements.

Recommendation #8: Parkland County ensure that the requirement of the Alberta Fire Code is emphasised in the development and occupancy permitting process

Suggested completion: 6-12 months

Cost: Administrative time only

Resource: Parkland County

Rationale: *Having the National Fire Code (NFC (AE) 2019) requirements out front with the other Safety Code requirements will ensure these requirements are addressed prior to construction and occupancy occur. Failure to address these requirements in advance leads to additional costs and conflict for the developer, occupant, and County where changes or improvements with systems are required.*

3.12.4 Public Education and Development

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. PCFS staff support several fire prevention and education activities including:

- FireSmart program
- Station tours
- Attending community events
- School visits
- Junior firefighter program

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

Many volunteer or 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 in British Columbia 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 materials16. 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.

Observation #9: PCFS staff provide a number of valuable public education and fire safety initiatives throughout the year. These activities have not historically been formally tracked within their RMS. The PCFS changeover to the new RMS system will offer the ability to effectively track and report on these important activities.

Recommendation #9: Parkland County Fire Services track all public education, fire safety and community engagement activities.

Suggested completion: Ongoing

Cost: Neutral

Resource: PCFS Operating staff time

Rationale: *Capturing all public education, fire safety and community engagement activities will assist with evaluating the effectiveness of each initiative and direct or indirect effects on fire incidents and related emergency incidents.*

3.12.5 Fire Cause and Origin Determination

The Alberta Safety Codes Act requires all fires causing injury, death and significant property loss are to be investigated in Alberta. The Alberta Government maintains a fire incident database and provides trend analysis to identify specific prevention campaigns based upon leading causes of fire. Examples include cooking safety, smoke alarm

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

maintenance, and fire prevention. Results of fire investigations within Parkland County can provide the foundation for identification of significant risks and the development of public education programs or initiatives.

PCFS conducts their own fire investigations relying primarily on their Fire Prevention Officer to undertake this task. The current practice is to limit their fire investigations to structure fires only. All fire investigation reports are completed and submitted to the province.

Observation #10: PCFS currently limits their fire investigations to structure fires with significant dollar loss or injury. This limitation has been attributed to a lack of PCFS resources available for fire investigation and cause determination. All fires with a significant dollar loss, injury or death, or suspected arson must be investigated. This interpretation will expand the investigations to other fires such as vehicle fires, outside fires, or other fires with a significant, or potentially significant impact on persons or the community.

Recommendation #10: Expand the type of fire investigations that Parkland County Fire Services will investigate to include all other fires that have a significant dollar loss, injury, or death, or suspected arson and include those that have the potential to have a significant impact on persons or the community. This may require additional training and responsibility delegation to PCFS staff.

Reference: Section 3.12.5 Fire Cause and Origin Determination, Pg. 76

Suggested completion: 1-24 months

Cost: TBD depending on a staff training

Resource: PCFS Operating budget

Rationale: *Fire investigations are an important component of public safety and are a requirement under the Alberta Safety Codes Act. Determining cause and origin will assist with identifying underlying safety concerns with products, persons, or processes.*

3.12.6 Pre-Incident Planning

Pre-incident plans are intended to provide emergency responders with advanced knowledge and processes for a safe and effective response. These 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 for various locations within the community.

Pre-planning programs are not necessarily tied directly to the fire inspection program but include operationally relevant information gained through an on-site visit. Pre-planning should also include potential responses to areas of concern not captured in the formal fire inspection program.

Pre-planning has historically been handled on an ad hoc basis by day shift firefighters or POC crews which were considered more of a familiarization exercise. Many of the larger industrial complexes require considerable resource time to complete a thorough pre-incident plan. With the high degree of occupancy changes experienced in the current building stock within Acheson Business Park, older pre-incident plans may not be accurate, which may lead to a higher risk to emergency responders than not having one at all. PCFS administration is in the process of formalizing these pre-incident plans.

Observation #11: PCFS staff have limited resources to complete comprehensive pre-incident planning. Feedback from PCFS staff indicate that numerous buildings within the Acheson Business Park have a high degree of occupancy change that make outdated pre-plans ineffective at best.

Recommendation #11 Working together with the development permitting process, PCFS staff should complete a pre-incident plan on high risk industrial and commercial properties when new construction or change of occupancy occurs.

Suggested completion: 24-36 months

Cost: Neutral

Resource: County and PCFS Administrative staff time

Rationale: *Initial and updated pre-incident plans on high-risk properties will assist PCFS to develop a safe and effective response plan should a request for emergency services be required.*

Table 20: PCFS Fire Prevention Services

Fire Prevention Activities	2021	2022	2023	2024
Inspections	20	18	48	43
Investigations	12	37	36	47
Fire Prevention Education	N/A	N/A	NA	N/A

3.13 911 and Fire Dispatch

Parkland County maintains their own regional, multi-service accredited Emergency Communication Centre located in the West Central Fire Station building that provides 24-hour 911 service to over 127 municipalities, including emergency fire dispatch to 60 fire departments including PCFS. Fire dispatch providers play an important role in both emergency and non-emergency response. Typical services provided by modern dispatch centers include:

- 911 or PSAP call taking
- Determine call type and severity (utilizing an accredited fire and EMS dispatch system)
- Extract pertinent information and provide timely relay to responders
- Dispatch and alerting of appropriate fire station and apparatus
- Provide life-saving support instructions to the caller prior to first responders' arrival
- Enter information into CAD or other permanent record systems
- Provide continuous support to the incident commander and crews on scene following incident command protocols
- Monitor for urgent or mayday messages that may be missed by on-scene personnel
- Other duties as required via local standard guidelines or policies.

Canadians depend on the provision of reliable and effective 911 services. As technology and consumer needs evolve, so do consumer expectations as it relates to 911 services. The transition to Internet Protocol (IP) technology will enable Canadians to access new, enhanced, and innovative 911 services with IP based capabilities, referred to as next generation 911 (NG 911) services. The Canadian Radio-Television and Telecommunications Commission (CRTC) has required that Canada's 911 system transition to next generation (NG911) capabilities by March 2027. The transition process involves multiple steps and requires action from 911 service providers, PSAP's, and municipalities.

As the 911 service provider in Alberta, the CRTC has tasked TELUS with migrating the province's service to NG911. Although local 911 service is typically provided through a PSAP, municipalities and First Nations are required to have a 911 agreement in place with TELUS to receive 911 service.

The Parkland County Emergency Communication Centre has made the necessary upgrades and testing for NG911 and are currently working with Telus for implementation.

3.14 Core Emergency Response Services

The core services being delivered by PCFS is consistent with purpose outlined in the Parkland County Fire Bylaw 2023-17. Parkland County is divided into seven (7) fire districts, that have both common and unique risks within each district. Initial emergency response is being provided by the nearest PCFS fire station or partner fire service. Additional resources will be provided by one or more of the remaining stations. Non-emergency or public services are provided in cooperation with all PCFS personnel.

3.14.1 Fire Suppression

The types of fire suppression requests that are typically encountered by the fire department include structural (commercial and residential), vehicle, wildland, outside fires (controlled or not), electrical and fires involving dangerous goods. Depending on the type and size of fire, resources should be adequate to manage the most probable risks. Suppression of each fire type encompasses a wide range of tactics for the control and extinguishment originating from several sources.

Fires of all types are the second most common incident type and make up ¼ of the total call volume encountered by PCFS (1120 of 4702)) over the 2019-2023 reviewed timeframe including.

- 274 structure fires
- 586 outside fires
- 117 Outside fires – controlled burn
- 217 vehicle fires
- 2 Train and rail fires

Structure fires involving 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 low to moderate risk as the consequence are limited to one or two properties. Residential fires are a leading cause of fire-related death, injuries, and property loss in Canada.

Industrial, commercial, and multi-family structures require a larger initial response to initiate evacuation, rescue, fire suppression and scene security to safely and effectively manage these larger scenes.

While in many communities, structure fires are not the most frequent emergency response request, they require a significant investment in resources (equipment and staffing), training and coordination to manage safely and effectively. PCFS trains and maintains their firefighters to the NFPA 1001 Level I and II standard.

All uncontrolled fires, however, contains a large degree of life safety and property risk to both the public and the firefighters where time and resources are paramount considerations for safe and effective resolution of the emergency. Available staffing and equipment should be adequate for firefighters to be able to safely perform the tasks expected of them. For PCFS the industry practice for response and operations are outlined in the NFPA 1720 Standard for Fire Suppression Operations. These standards are further covered in Section 4.

Structural fire suppression encompasses a wide range of tactics for the control and extinguishment of fires originating from several sources. Sufficient firefighters arriving on-scene in a timely manner are paramount to facilitate safe and effective rescue and suppression tactics for the control and extinguishment of fires. PCFS maintains a modern fleet of emergency response apparatus and equipment along with a well-trained team of career firefighter and Paid-on-call (POC) firefighters available for emergency structural fire response.

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.

The current practice for emergency response is a combination of firefighters responding from the closest fire station on the appropriate apparatus, with additional firefighters responding from one or more additional PCFS or partner fire stations to assemble an effective response force.

Most interview and survey participants agreed that PCFS was adequately trained and minimally staffed to safely manage most structural fire incidents, however significant concern was expressed regarding ability to establish an effective response force (ERF) for larger, high risk commercial and concurrent emergency responses.

Minimum staffing level constraints and availability of POC firefighters in PCFS is the most significant limiting factor in determining the actual effectiveness of any given emergency response.

Wildland and other uncontrolled outside fires pose a significant risk to areas within Parkland County and require a rapid initial response to contain the spread of the fire to other lands and/or structures. 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 Parkland County. This risk is discussed in detail in the Community Risk Overview.

Parkland County is well equipped and trained to provide a rapid initial response to these types of fires. PCFS policies and procedures outline wildland firefighting procedures and identifies that all firefighters operating in the hot zone of the fire must be NFPA 1140: Standard for Wildland Fire Protection. Further, the PCFS and partner fire departments fleets includes several tenders, and utility terrain vehicles in support of wildfire control and suppression.

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

3.14.2 Medical Assistance

Medical assistance is a valuable core service provided by PCFS. The number of medical responses requested totaled 442 which amounts to 9% of the total call volume for the 2019-2023 period.

PCFS has established a tiered medical agreement with Alberta Health Services that outlines the medical criteria and the type and severity of medical incidents that fire will respond to. Consistent with the Alberta Medical First Responder (MFR) Response Plan.

Interviews and survey results have indicated that providing emergency medical assistance to AHS is a valuable service being provided to the Parkland County communities and has not had a significant impact on their other core services.

3.14.3 Motor Vehicle Collisions

Motor vehicle collisions (MVCs) with or without trapped persons can pose unique hazards to both the victims and responders. Vehicle extrication requires specialized training and equipment. Close coordination with police and ambulance services is necessary for the safety of both victims and responders. Road speeds, vehicle types and weather conditions also contribute significantly to both the severity of the incident and the effectiveness of the response.

Many 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.

PCFS is trained and equipped to manage vehicle collision and extrication incidents (services provided to the NFPA 1001 and NFPA 1006 Standard). Depending on the nature of the incident, fire engines, tankers, and/or rescues are typically deployed to these events.

PCFS responded to 1674 motor vehicle incidents in the 2019- 2023 reporting period. The yearly number of these type of responses has remained fairly consistent throughout this period.

High-speed roadways and provincial highways are common throughout and around the county. Responses on these roadways may present hazardous conditions for all responders. PCFS resources must work closely together with partner agencies at the scene of an MVC.

These types of incidences may require the resources and expertise of PCFS staff including:

- Scene safety
- Fire suppression
- Extrication
- Stabilization
- Medical first aid
- Dangerous goods control
- Special rescue

Additional apparatus and staff are often required to provide support to other agencies for equipment and roadway safety.

3.14.4 Dangerous Goods Response

The term 'Dangerous Goods' utilized in Canada is synonymous with the term 'Hazardous Materials' utilized in the USA. 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/dangerous goods (DG) response. There are three 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 dangerous goods. Responders at the awareness level are expected to recognize the presence of dangerous goods, 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 dangerous goods 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 dangerous goods. Given the required training, cost of equipment and limited community need, this level of service is only provided by larger communities in Alberta.

PCFS responded to 116 dangerous goods incidents in the 2019-2023 reviewed period. 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. PCFS provides an operations level of service, with several its members trained to a technician level. Parkland County is in close proximity to the City of Edmonton. Edmonton Fire Rescue maintains a dedicated dangerous goods team and can be requested for response to incidents when warranted. In some cases, industry will have or have access to specific dangerous goods teams. PCFS should continue to provide the operations service level given the quantity of dangerous goods present in or passing through the County. This level of service meets the immediate need to initiate rescue and evacuation, as well as manage limited releases with defensive techniques.

3.14.5 Technical Rescues

Rescue operations are often unique situations that require specialized equipment and training to ensure the responders maintain the competencies to safely execute the rescue. There may be a rescue component to other emergency situations that require careful coordination among all emergency responders on scene. 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 and equipment to maintain competencies. PCFS offers the following technical rescue services:

- MVC Rescue
- High and Low-Angle Rescue
- Open Water (Lake Only)
- Ice Rescue

MVCs and associated rescue services are a frequent request across the County. PCFS responded to 1674 MVC incidents and 11 requiring extrications during the 2019-2023 reporting period. Many of these incidents involve highspeed highways with heavy traffic. Additional resources are often required to ensure these incidents and scenes can be managed in a safe and effective manner.

PCFS responded to nine high angle rescue incidents during the 2019-2022 reporting period. These types of rescues require the proper inventory of appropriate rescue and personal protection equipment and must be performed by qualified personnel. PCFS responded to 36 water rescues and 24 watercraft in distress incidents during the 2019-2023 reporting period. The West Central Fire Station maintains a rescue boat and has competent trained firefighters to provide this service. Water rescue incidents are typically assigned to the West Central Fire Station in Wabamun.

All rescue service-related SOGs must identify the skill, training and specialized equipment and tactics to be adhered to in the respective rescue specialty. The competency of first responders should be monitored, tracked and certifications renewed as warranted to ensure competency is maintained. Given the low frequency of these events, training frequently to maintain competency is required.

PCFS may be required to respond 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 within the Acheson Business area involve processes involving unique hazards. Where practical, the PCFS should request response plans from these industries. In addition, PCFS responders should exercise the greatest caution not to place themselves at risk if there is not a clear understanding the hazards rescuers may face.

3.15 Emergency Management Program and Emergency Coordination Centre

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 Parkland County Emergency Management department leads the coordination and planning for disasters and hazards that impact the community. The mandate is to promote a state of readiness and resilience within the community and its residents. To consistently perform at a high level, the County regularly provides training and instruction to their internal Incident Management Team (IMT).

This department utilizes the four pillars of emergency management:

- Mitigation
- Preparedness
- Response
- Recovery

Core functions include:

- Emergency Alerts
- Emergency Preparedness
- Emergency Response
- Emergency Vendor Procurement

The main Emergency Coordination Centre (ECC) is located in the Parkland County Administrative building. A back-up ECC is located in the Acheson fire station if needed. In partnership with the Alberta Emergency Management Agency. Parkland County has access to their mobile command unit which is stored in the Acheson fire station.

3.16 Capital Assets

3.16.1 Facilities

Fire station/s have a long history going back to the late 17th century when organized fire services were first organized. Typically, early fire stations housed simple fire pumps, facilities for the horses that pulled the fire pumps and living quarters for firefighters. Today's fire stations are typically used to store modern firefighting apparatus and equipment as well as living quarters for firefighters in many cases for 24 hours a day, 7 days a week. Modern fire halls are ideally located in strategic locations with modern technology that allow for a quick response, all to accommodate larger and heavier fire apparatus. Health and safety and environmental considerations are now necessary criteria for the design and function of a fire station, with necessary renovations being made if feasible.

PCFS provides fire and emergency response, as well as fire prevention and public education services to Parkland County out of four fire stations along with three contracted fire services (Yellowhead County, Stony Plain and Devon) that are located within the municipality. An overview of the four PCFS fire stations and an assessment of what are considered necessary amenities for a fully functional fire station are detailed.

3.16.1.1 Acheson Fire Station Overview and Assessment

Station Name:	Acheson Fire Station
Address:	11350 – 274 Street, Acheson
Constructed:	2014
	
Use:	Single-Station for Fire & Rescue Operations
Bays:	6 (4 Double Drive through)
Purpose and Design	This Fire Station is the location of PCFS Administration Headquarters and located in the Acheson development area with a primary response area of District 2. This station accommodates administration, fire prevention, training, and fire emergency response (full-time and paid-on-call) staff.
Safety, Environment and Code Compliance	The station is equipped with fire suppression systems, smoke detectors, and an integrated alarm system. Security is provided via combination-type door locks, though there is no intrusion alarm. Vehicle exhaust removal systems are installed, and the building complies with current fire and life safety codes.
Comments	Put into service in 2014, this facility has the capacity to safely and effectively accommodate the size and technology of modern apparatus. The training room is designated as the back-up EOC for Parkland County. Consistent with all PCFS fire stations, this fire station is well maintained and clean. There is insufficient office space for the administration and station officer needs with little room for expansion or re-design. Adjustments or renovations would be necessary to enhance the living quarters should fulltime, 24-hour staffing be put in place for this fire station.

Table 21: Acheson Fire Station Assessment

Item	Description	Yes	No	Comments
1	Site security	✓		Key fob access
2	Adequate parking for staff and visitors	✓		Not sufficient if all staff are on site
3	Internet and intranet connectivity	✓		
4	Adequate space for training – training props, hydrant	✓		Practical training done in rear parking area
5	Back-up power supply	✓		
6	Officer office	✓		Insufficient – shared space
7	Administrative support office/space	✓		Insufficient – shared space
8	Training room / meeting room	✓		Designated alternate EOC
9	Office security		✓	
10	Dorm rooms		✓	
11	Day use area	✓		
12	Kitchen	✓		
13	Fitness / wellness area	✓		
14	Firefighter Men's and ladies' bathrooms and showers	✓		
15	Space to safely garage and do minor maintenance on vehicles	✓		
16	Hose drying area	✓		Hose drying tower
17	Small equipment storage and maintenance room	✓		
18	Air filling station room complete with proper ventilation	✓		
19	Industrial washer and dryer room	✓		
20	Bunker gear storage room complete with proper ventilation	✓	✓	Some racks with ventilation and others located in the bay
21	Consumables storage room	✓		
22	Sufficient workstations	✓		
23	Sufficient supervisor space		✓	Shared office space.
24	Public and Staff Washrooms	✓		Staff only
25	Kitchen/ lunchroom	✓		
26	Locker room	✓		
27	Proper Interior Lighting	✓		

Observation #12: The Acheson fire station houses the PCFS administration, fire prevention, training, career and POC firefighters. This fire station is the location of PCFS administration, training and fire prevention personnel and the primary response station for the Acheson Business Park that contains the highest risk within Parkland County. This fire station should be assessed to determine whether the current and future needs are/will be met. As an example, there is currently a shortage of dedicated office space for administrative officers and no provisions for dormitory space should this fire station move to a 24-hour, 7 day a week firefighter staffing level.

Recommendation #12: Perform a feasibility station assessment of the Acheson Fire Station to determine its ability to meet current and future requirements for PCFS.

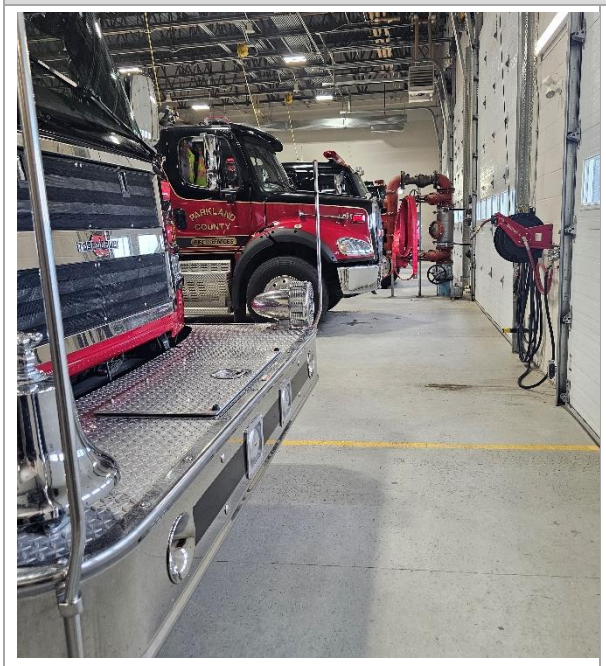
Suggested completion: 6-12 months

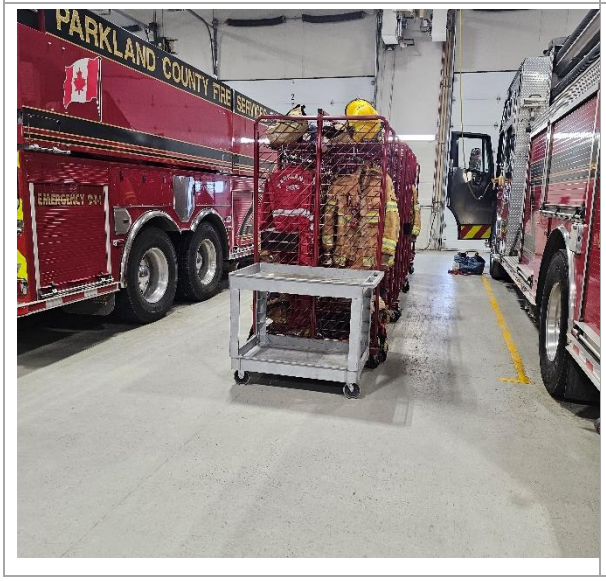
Cost: TBD, based on internal resource availability and professional engineering requirements.

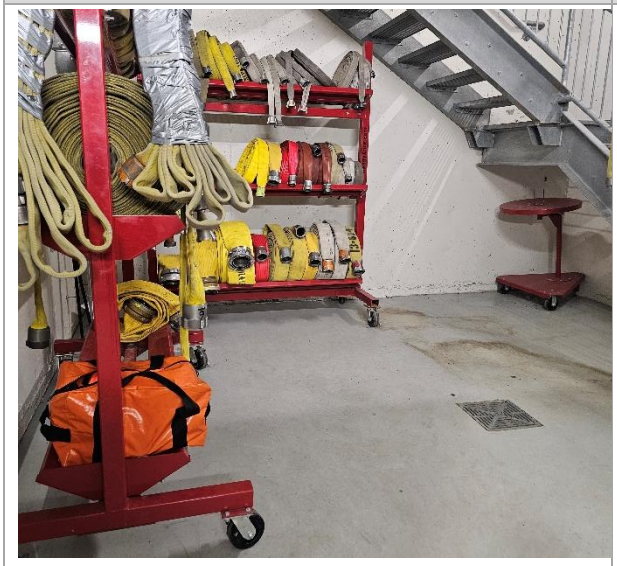
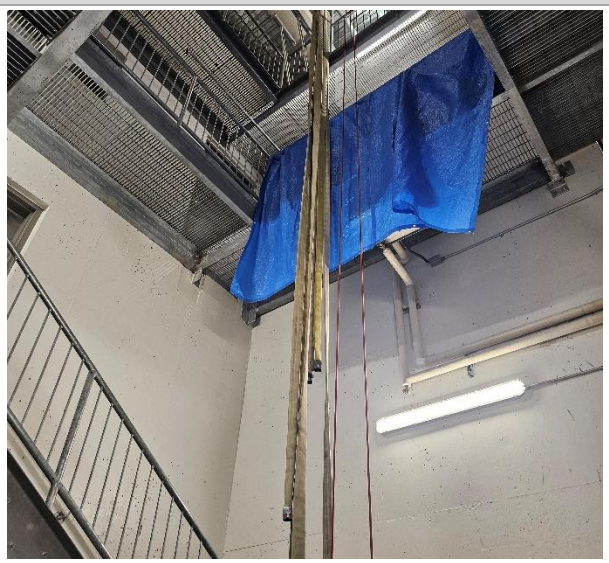
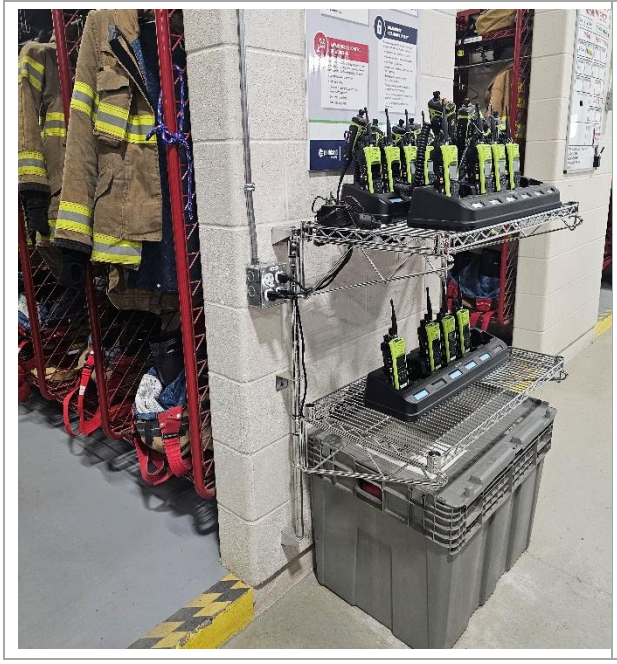
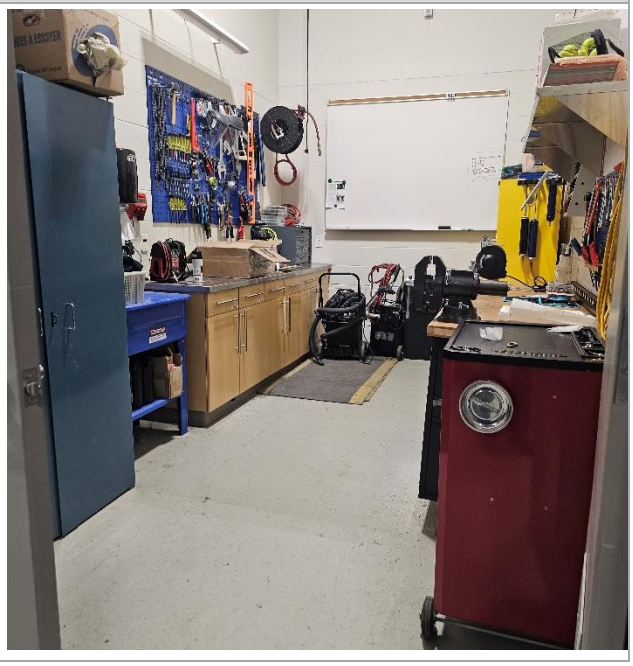
Resource: Capital budget potentially funded by Off-site levies

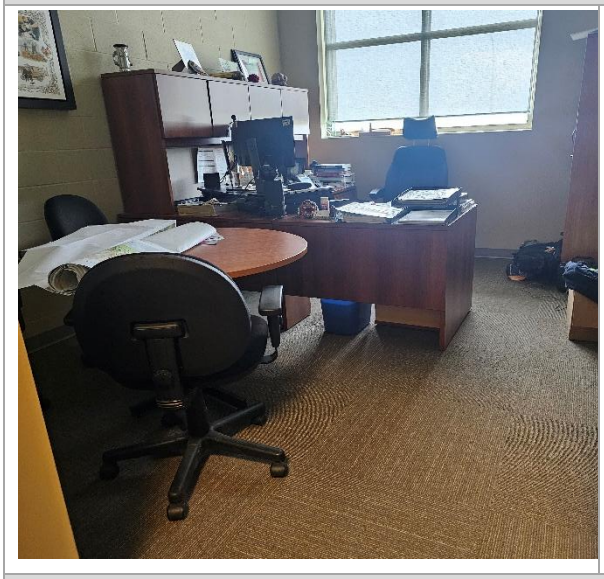
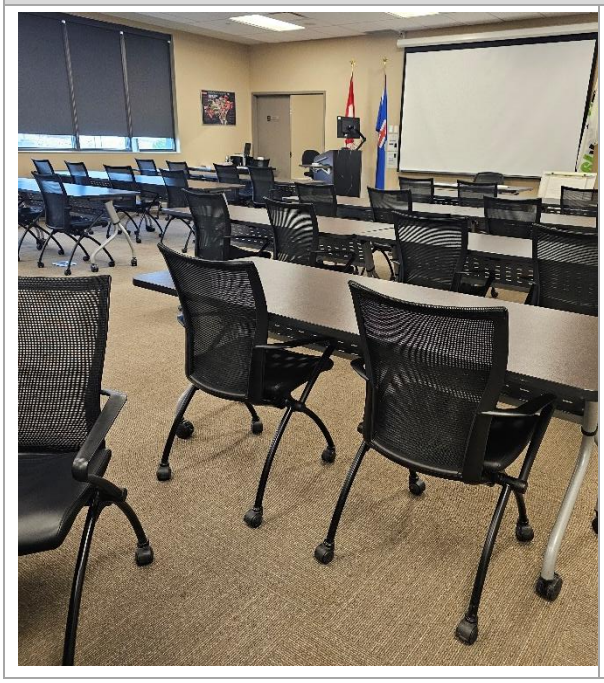
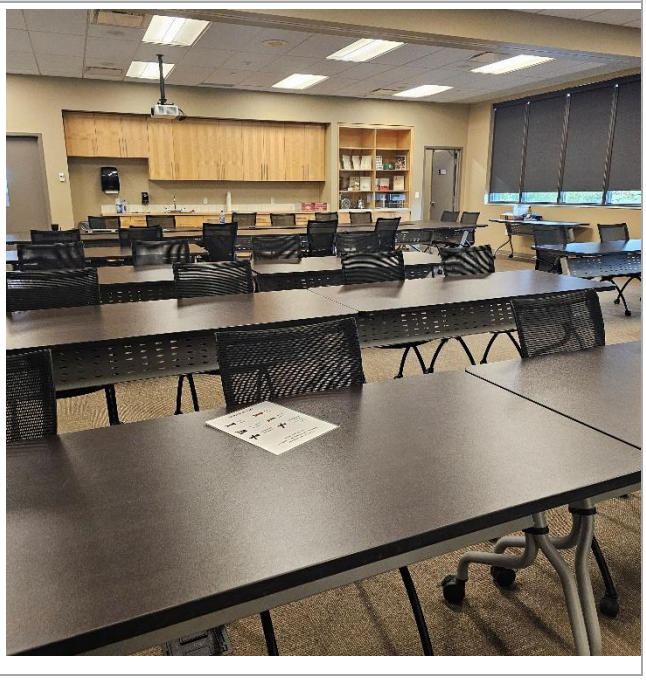
Rationale: *The demands for services from the Acheson fire station is forecast to continually rise. Building adjustments and renovations will be required to meet these increasing demands.*

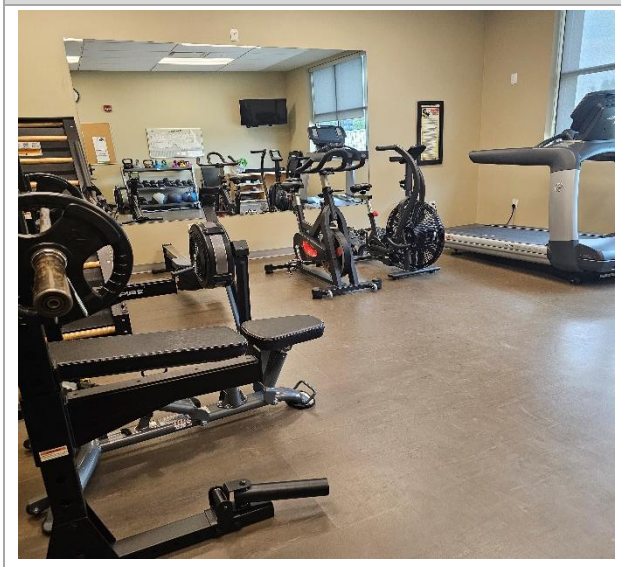
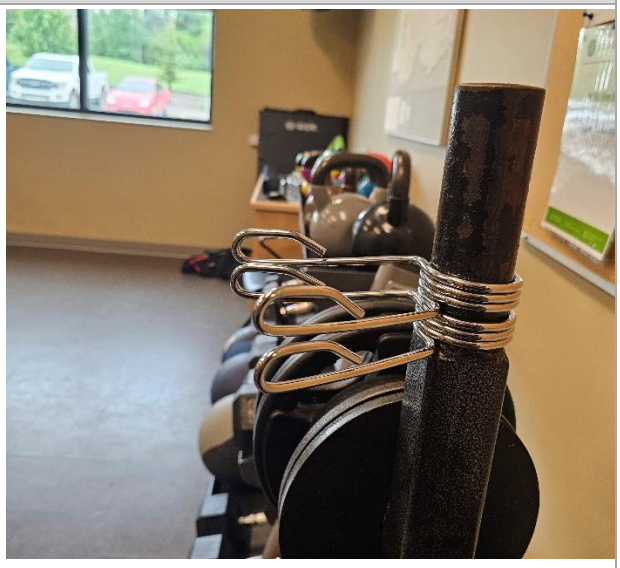
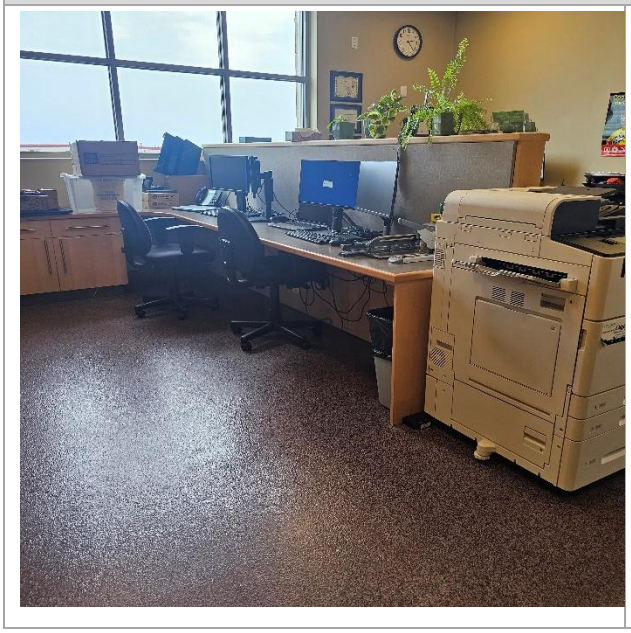
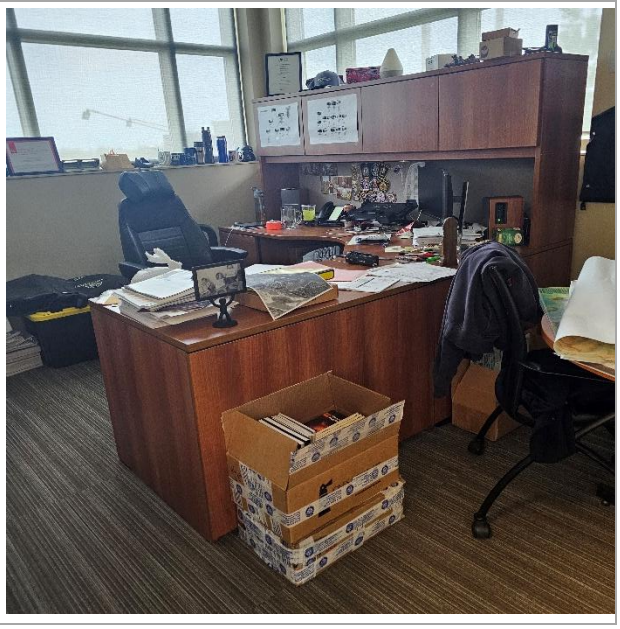
Apparatus Bay



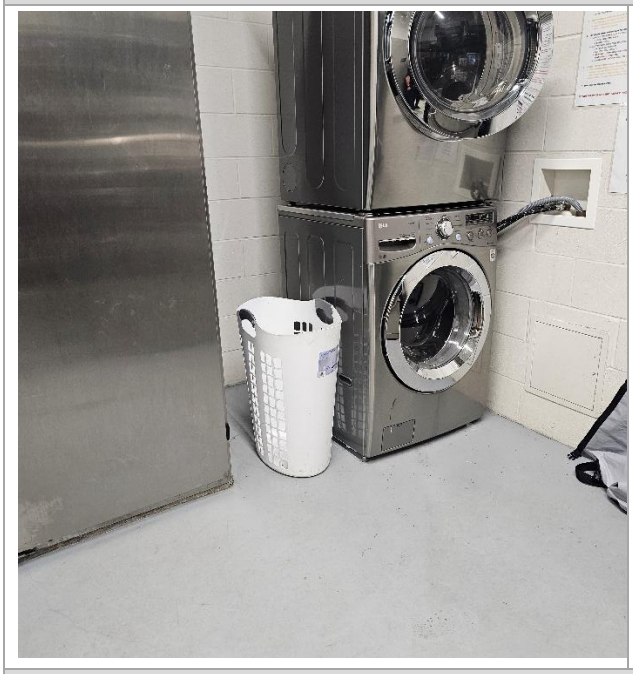


Hose Storage Area	Hose Drying Area
	
Portable Radio Station	**Maintenance Area**
	

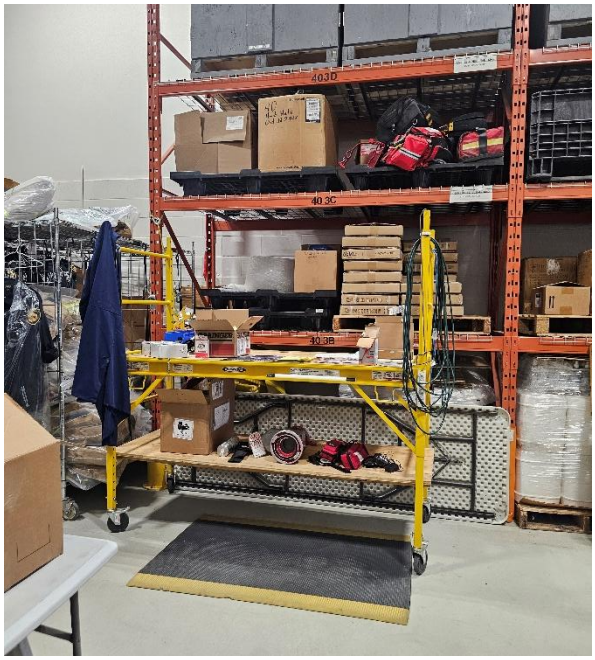
Offices	
	
Training Room	
	

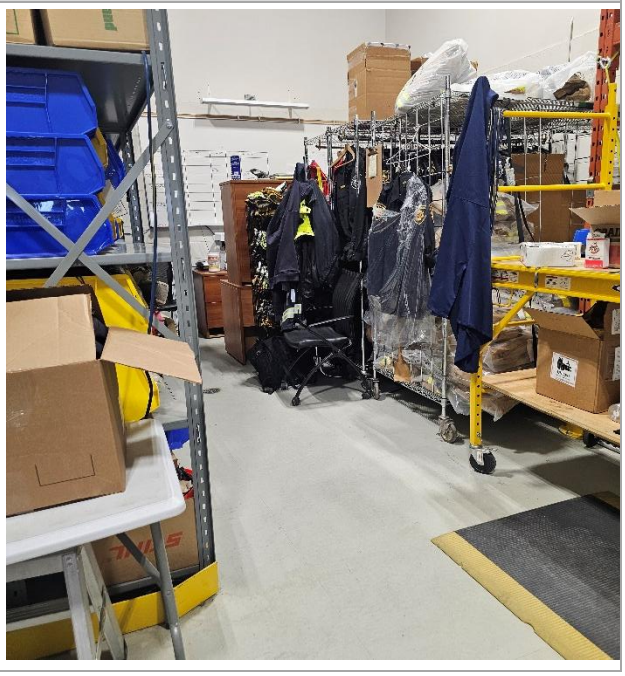
Fitness Area	
	
Office Area	
	

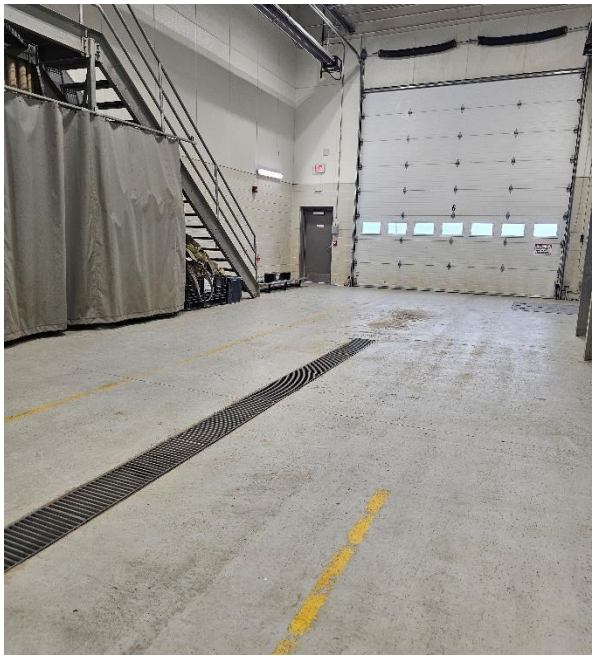
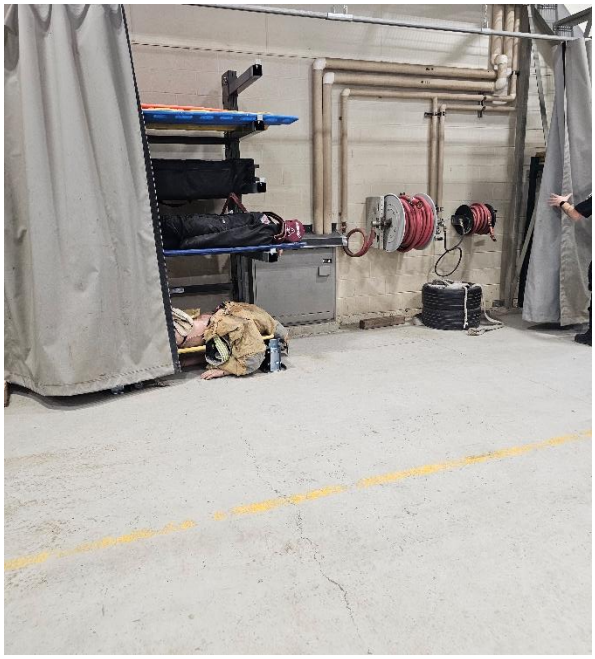
Washer, Dryer, and Extractor



Logistics Area





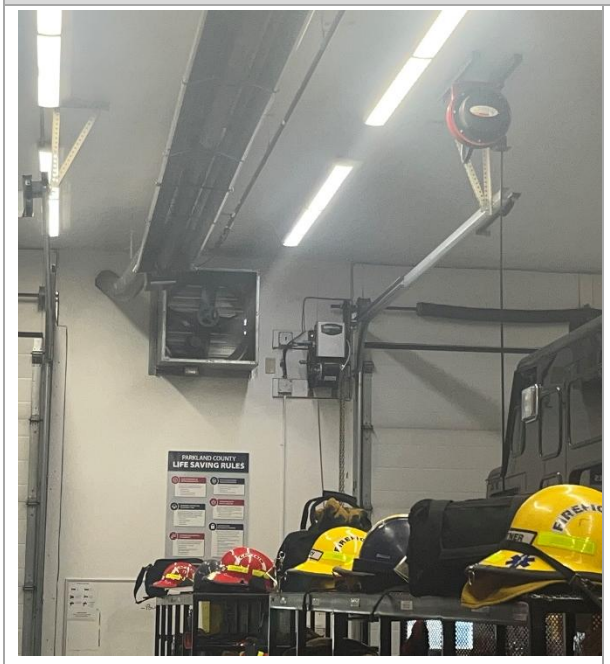
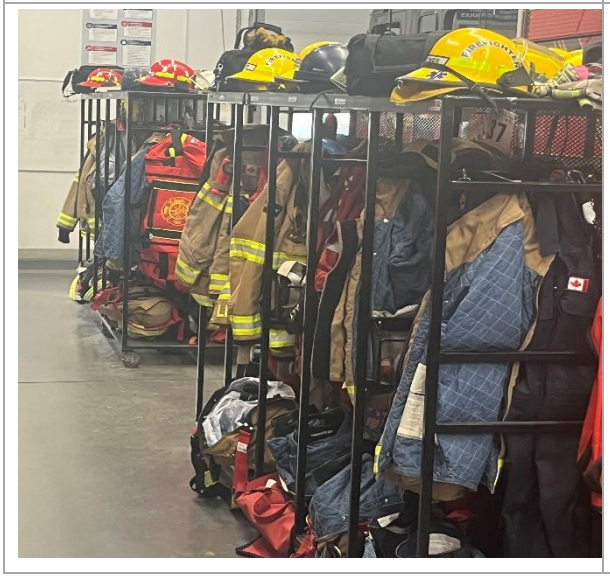
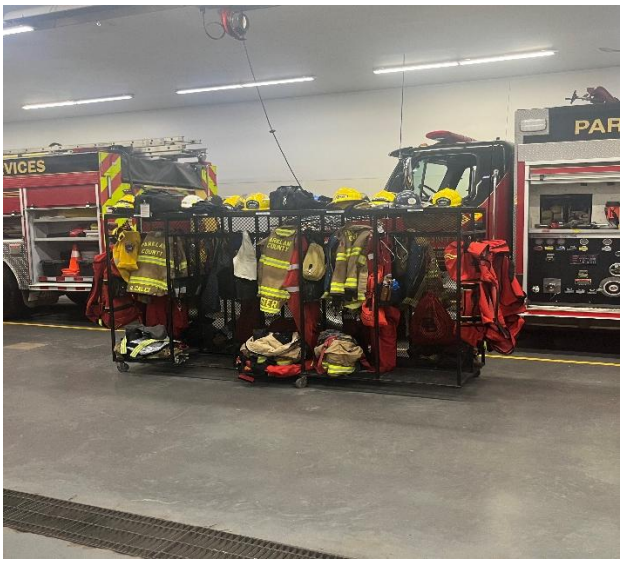
Wash Bay	
	

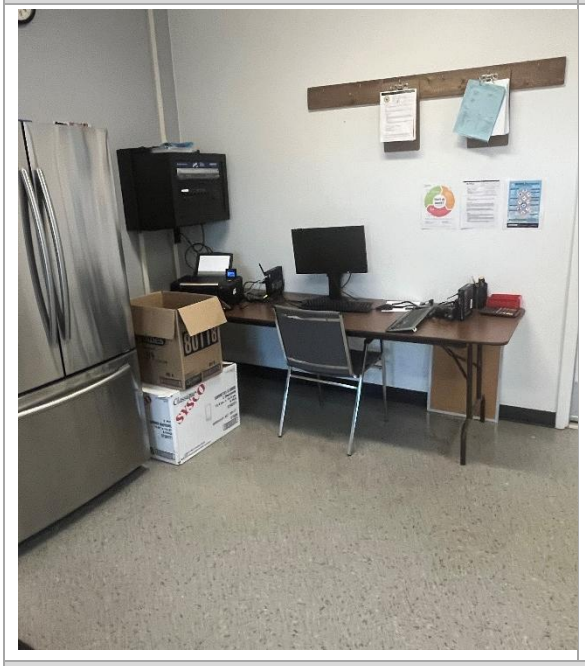
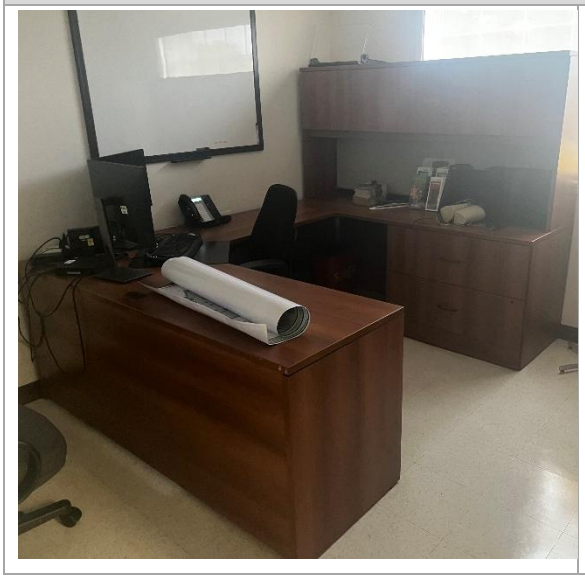
3.16.1.2 Parkland Village Fire Station Overview and Assessment

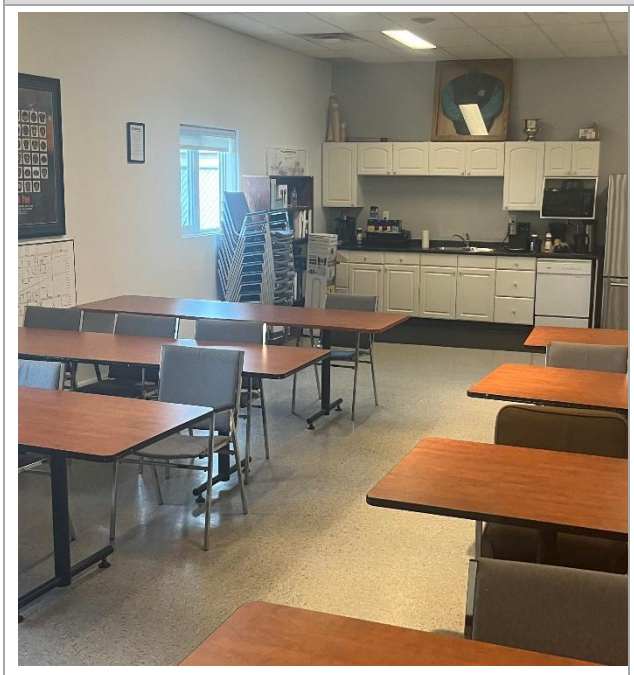
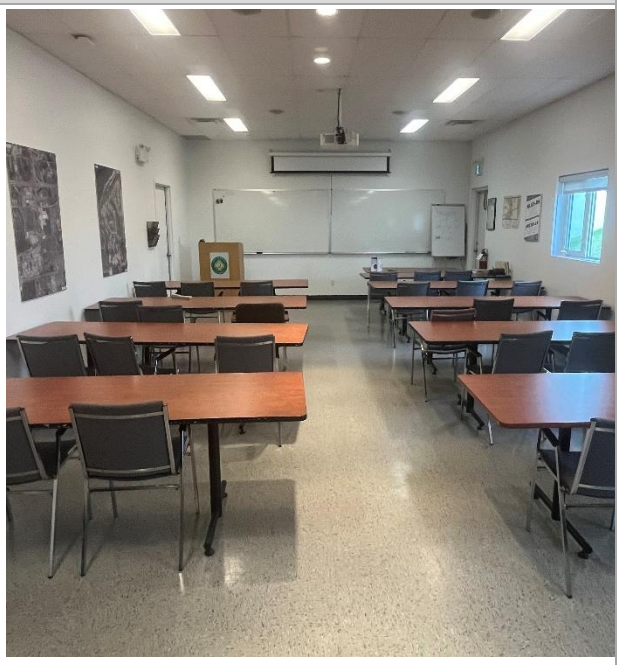
Station Name:	Parkland Village Fire Station
Address:	18, 53222 Range Road 272, Parkland Village
Constructed:	1994
	
Use:	Single-Station for Fire & Rescue Operations
Bays:	2 tandem bays and one single
Purpose and Design	This is a PCFS POC station with an initial response area of District 2 along with the Acheson fire Station. It contains the basic requirements of a modern fire department. There are 30 paid-on call firefighters assigned to this fire station. The single-story, three-bay building is sufficient for the needs for this area.
Safety, Environment and Code Compliance	The station is equipped with smoke detectors. There is no security system in this building and access is provided via combination-type door locks, though there is no intrusion alarm. Vehicle exhaust removal systems are installed, and the building complies with current fire and life safety codes.
Comments	Initially designed and built to meet the needs of a POC fire station, it continues to meet the immediate needs for PCFS. There is no room within the building for expansion to accommodate additional apparatus or operational space. Consistent with all PCFS fire stations, this fire station is well maintained and clean.

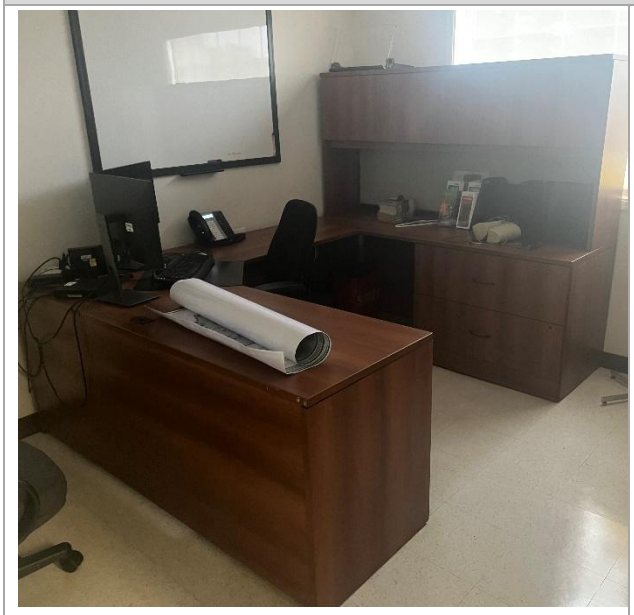
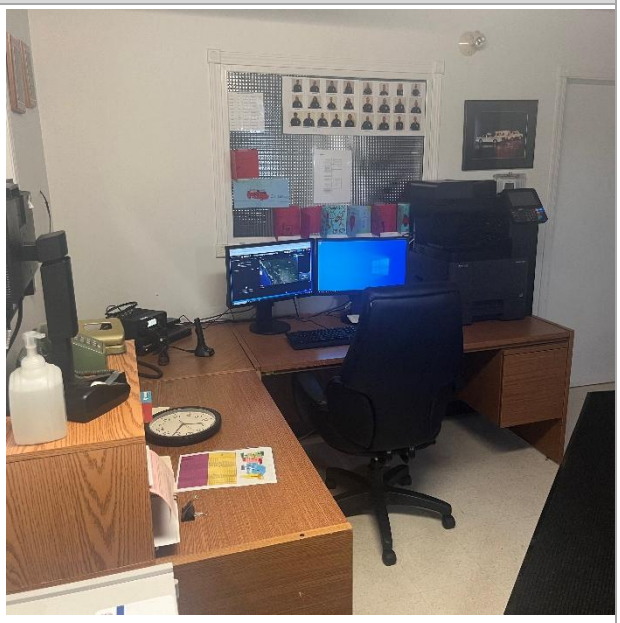
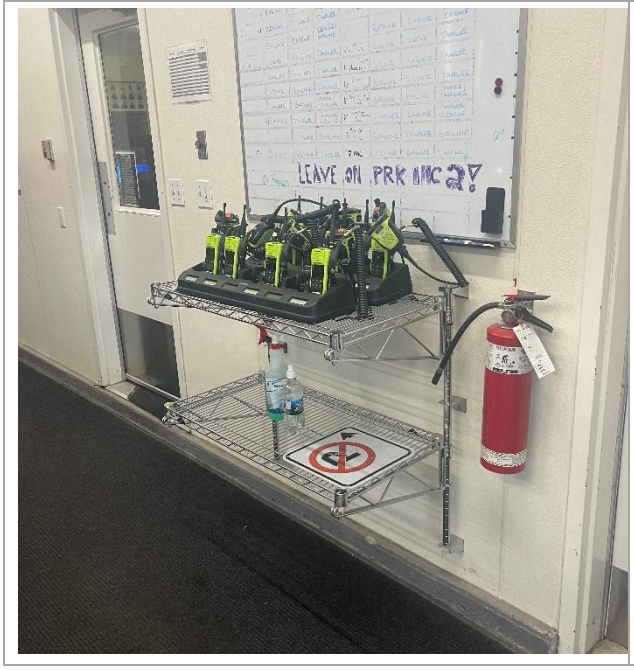
Table 22: Parkland Village Fire Station Assessment

Item	Description	Yes	No	Comments
1	Site security	✓		
2	Adequate parking for staff and visitors	✓		
3	Internet and intranet connectivity	✓		
4	Adequate space for training – training props, hydrant		✓	
5	Back-up power supply		✓	
6	Fire Chiefs' office		✓	Room for two offices
7	Deputy's Chief's offices		✓	
8	Emergency management office		✓	
9	Administrative support office/space		✓	
10	Training room / meeting room	✓		
11	Office security	✓		
12	Dorm rooms		✓	
13	Day use area	✓		Combined with training area
14	Kitchen	✓		
15	Fitness / wellness area	✓		
16	Firefighter Men's and ladies' bathrooms and showers	✓		
17	Space to safely garage and do minor maintenance on vehicles	✓		
18	Hose drying area		✓	
19	Small equipment storage and maintenance room	✓		
20	Air filling station room complete with proper ventilation		✓	
21	Industrial washer and dryer room	✓		Residential only
22	Bunker gear storage room complete with proper drying and ventilation		✓	gear storage racks on apparatus floor
23	Consumables storage room	✓		
24	Sufficient workstations	✓		
25	Sufficient supervisor space	✓		
26	Breakout or quiet room		✓	
27	Public and Staff Washrooms	✓		Two gender-neutral washrooms
28	Kitchen/ lunchroom	✓		
29	Locker room			
30	Proper interior Lighting	✓		

Apparatus Bay	
	
	

Computer Workstation	Maintenance Area
	
Office Area	
	

Training Area	
	
Fitness Area	Air Monitoring and Bump Station
	

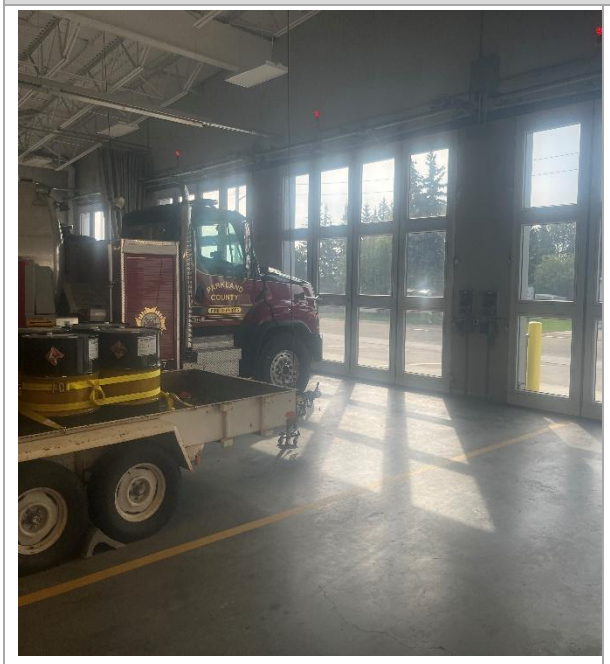
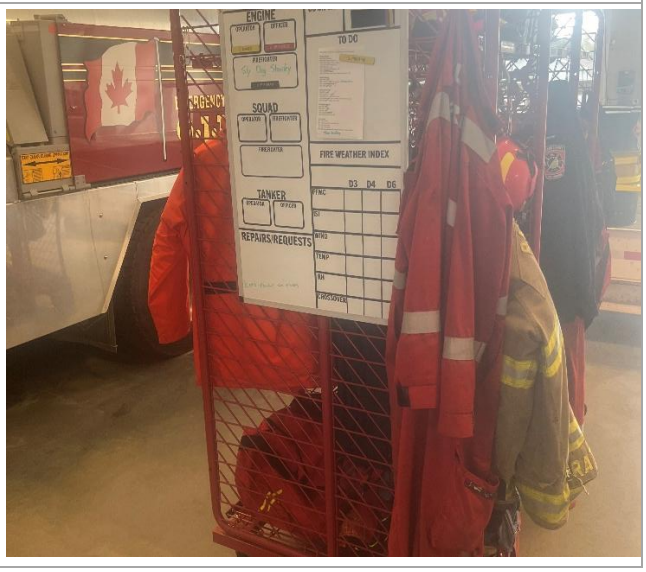
Office Area	
	
Portable Radio Station	Wash Station
	

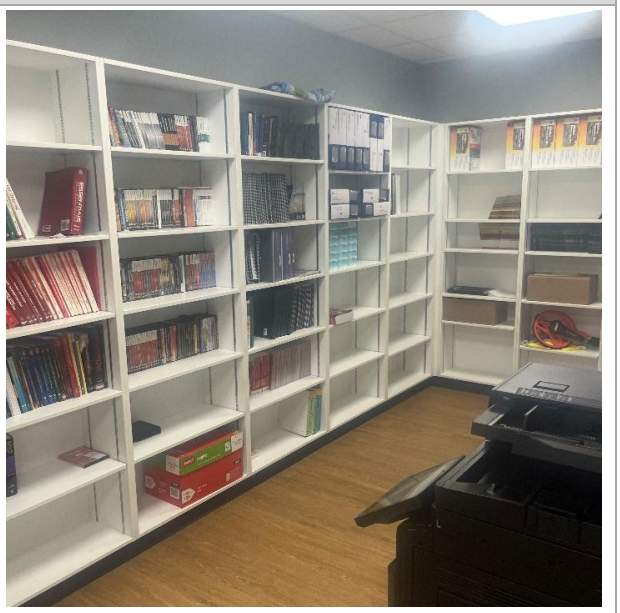
3.16.1.3 West Central Fire Station Overview and Assessment

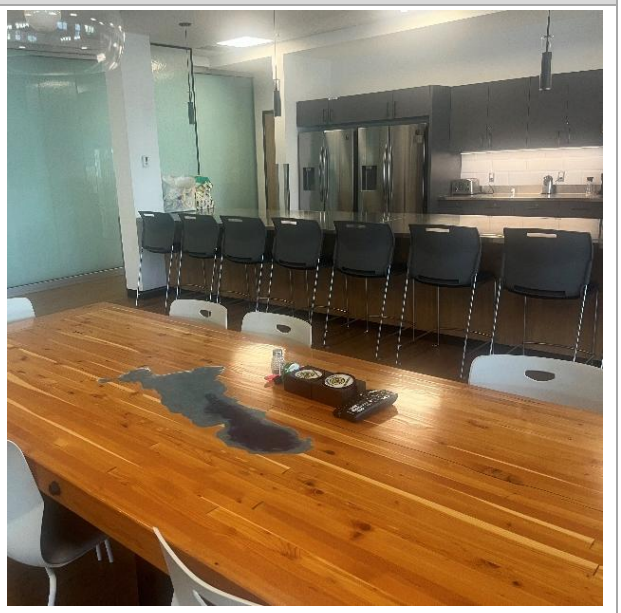
Station Name:	West Central Fire Station
Address:	4820 – 52 Avenue, Wabamun,
Constructed:	2022
	
Use:	Single-Station for Fire & Rescue Operations
Bays:	3 drive-through and 1 back in bay
Purpose and Design	This is a PCFS career and POC station with an initial response area of District 4. This building is also the location of the Parkland County Emergency Communications Centre. There are 3 career firefighters and up to 40 paid-on call firefighters assigned to this fire station. The two-story, four bay building is sufficient for the needs for this area.
Safety, Environment and Code Compliance	The station is equipped with fire suppression systems, smoke detectors, and an integrated alarm system. Security is provided via links to the 24-hour Parkland County Emergency Communications Centre. Modern OHS fire station requirements are installed, and the building complies with current fire and life safety codes.
Comments	A modern building constructed in 2022, it contains the requirements of a modern fire department and effective emergency dispatch centre. Consistent with all PCFS fire stations, this fire station is well maintained and clean. This building should meet the needs of PCFS for the foreseeable future.

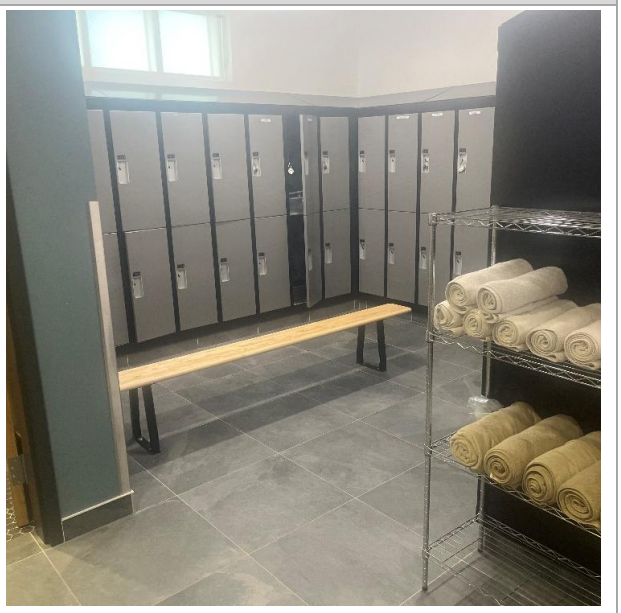
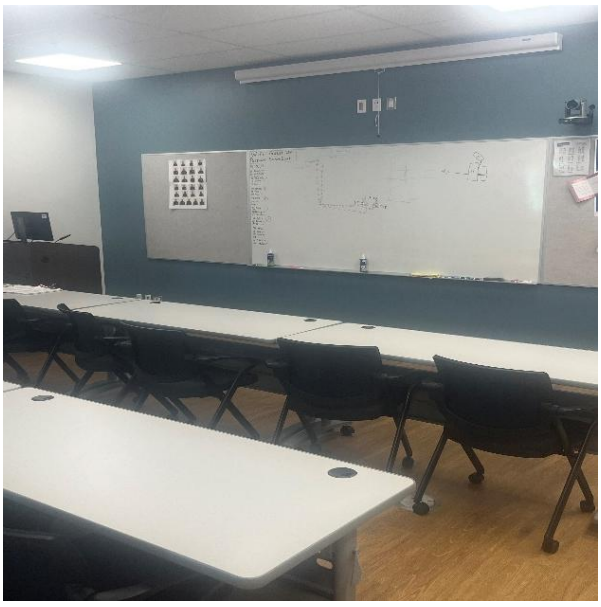
Table 23: West Central Fire Station Assessment

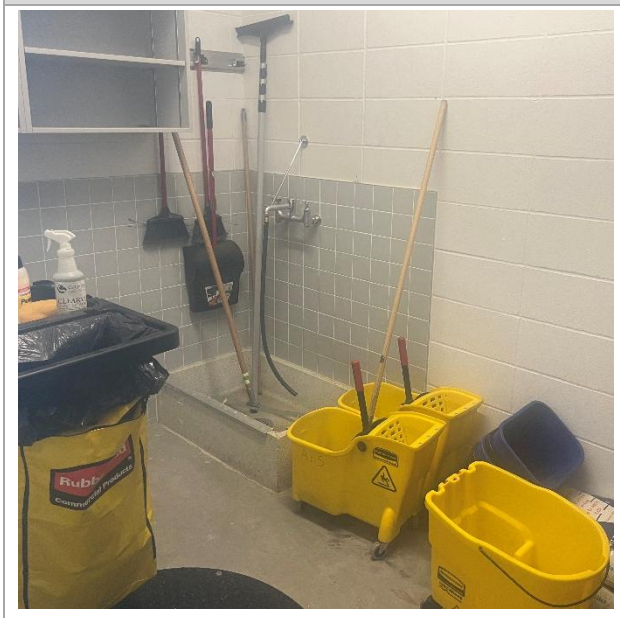
Item	Description	Yes	No	Comments
1	Site security	✓		Monitored through cameras into dispatch
2	Adequate parking for staff and visitors	✓		
3	Internet and intranet connectivity	✓		
4	Adequate space for training – training props, hydrant	✓		
5	Back-up power supply	✓		
6	Officer office	✓		
7	Administrative support office/space	✓		
8	Training room / meeting room	✓		
9	Office security	✓		
10	Dorm rooms	✓		
11	Day use area	✓		
12	Kitchen	✓		
13	Fitness / wellness area	✓		
14	Firefighter Men's and ladies' bathrooms and showers	✓		
15	Space to safely garage and do minor maintenance on vehicles	✓		
16	Hose drying area	✓		
17	Small equipment storage and maintenance room	✓		
18	Air filling station room complete with proper ventilation	✓		
19	Industrial washer and dryer room	✓		
20	Bunker gear storage room complete with proper ventilation	✓		
21	Consumables storage room	✓		
22	Sufficient workstations	✓		
23	Sufficient supervisor space	✓		
24	Public and Staff Washrooms	✓		
25	Kitchen/ lunchroom	✓		
26	Locker room	✓		
27	Proper Interior Lighting	✓		

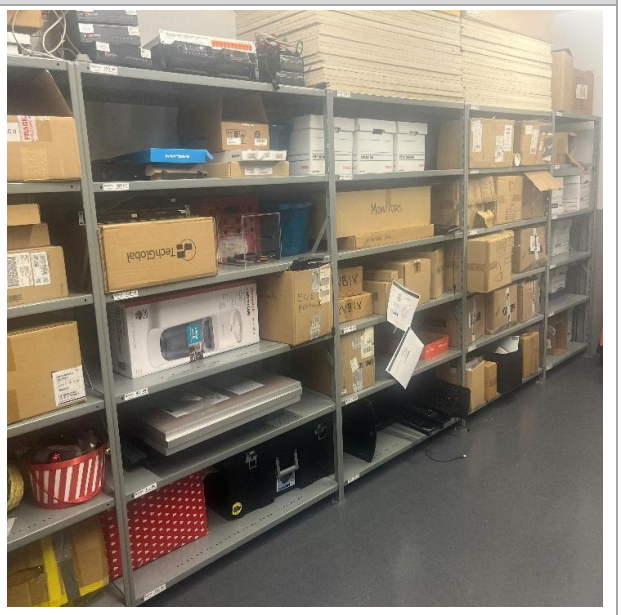
Apparatus Bay	
	
	

Apparatus Bay	
	
Living Area	
	

Kitchen Area	
	
Meeting Room	Maintenance Area
	

Finess Area	Locker Area
	
Training Room	
	

Utility Room	Washer and Extractor
	
Workstation	**Tech Room**
	

SCBA Fill Station	Storage Room
	

3.16.1.4 Tomahawk Fire Station Overview and Assessment

Station Name:	Tomahawk Fire Station
Address:	4902 -50 Avenue, Tomahawk
Constructed:	1991
	
Use:	Single-Station for Fire & Rescue Operations
Bays:	5 back-in bays
Purpose and Design	This is a PCFS POC station with an initial response area of District 6. There are up to 20 paid-on call firefighters assigned to this fire station. The two-story, five bay building is currently meeting the needs for this area.
Safety, Environment and Code Compliance	The station is equipped smoke detectors, but no alarm system. Security is provided via combination-type door locks, though there is no intrusion alarm. and the building complies with current fire and life safety codes but are absent in many of the identified OHS advancements of modern fire stations.
Comments	Constructed in 1991 and initially designed and built to meet the needs of a POC fire station. This building has the minimum requirements of fire station functionality, however, is meeting the current needs for PCFS. This facility does not effectively accommodate the size and technology of modern apparatus. There is no room for expansion to accommodate additional apparatus or operational space within the current building envelope. Consistent with all PCFS fire stations, this fire station is well maintained and clean. This building may continue meet the needs of PCFS for the foreseeable future.

Table 24: Tomahawk Fire Station

Item	Description	Yes	No	Comments
1	Site security	✓		Keypads on doors
2	Adequate parking for staff and visitors	✓		
3	Internet and intranet connectivity	✓		
4	Adequate space for training – training props, hydrant	✓		No designated practical training area
5	Back-up power supply		✓	
6	Officer office	✓		
7	Administrative support office/space		✓	
8	Training room / meeting room	✓		
9	Office security		✓	
10	Dorm rooms		✓	
11	Day use area	✓		
12	Fitness / wellness area	✓		Treadmill in main day use area
13	Firefighter Men's and ladies' bathrooms and showers	✓		
14	Space to safely garage and do minor maintenance on vehicles		✓	
15	Hose drying area	✓		Racks on rear wall of apparatus floor
16	Small equipment storage and maintenance room		✓	
17	Air filling station room complete with proper ventilation	✓		
18	Industrial washer and dryer room	✓		Washer and dryer. No extractor
19	Bunker gear storage room complete with proper ventilation		✓	On bay floor
20	Consumables storage room		✓	
21	Sufficient workstations	✓		
22	Sufficient supervisor space	✓		
23	Public and Staff Washrooms	✓		Staff only
24	Kitchen/ lunchroom	✓		
25	Locker room	✓		
26	Proper Interior Lighting	✓		

Observation #13: The Tomahawk fire station was designed and constructed to meet the needs of a paid-on-call fire service. This fire station has met and continues to meet the needs of the area within Parkland County. There are up to 24 POC officers and firefighters committed to this fire station. Due to the physical layout of the station, firefighters are required to walk through the day use area with their bunker gear depending on the apparatus required in either of the apparatus bays. A complete building and functionality assessment should be undertaken to determine the ongoing viability of this fire station.

Recommendation #13: Parkland County conduct a complete and comprehensive building and functional assessment of the Tomahawk Fire Station.

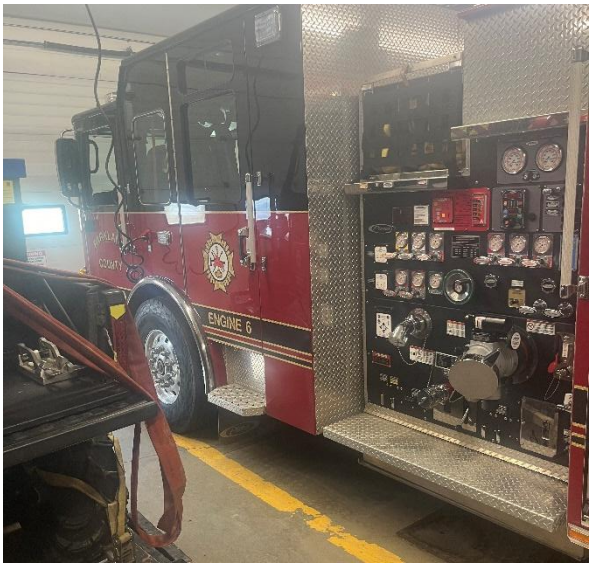
Suggested completion: 6-18 months

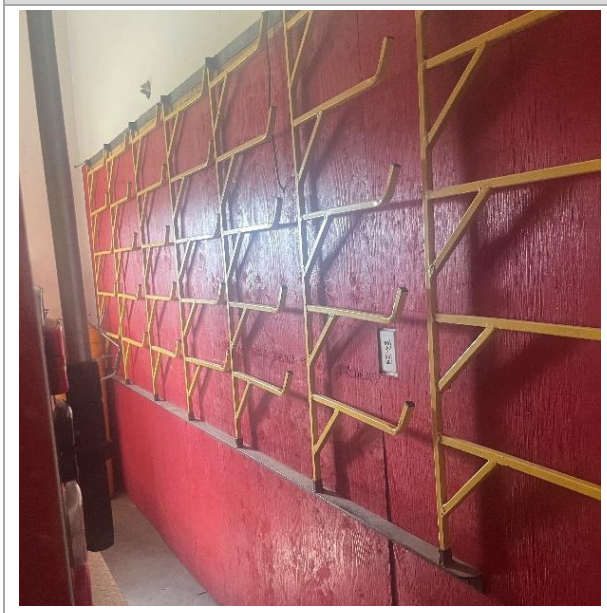
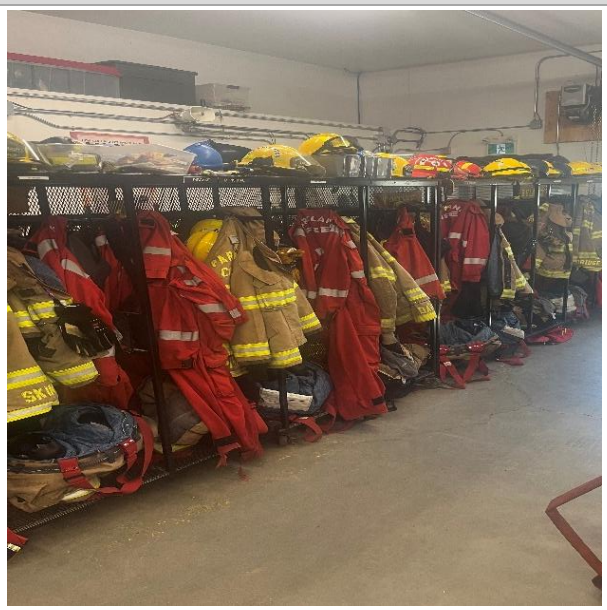
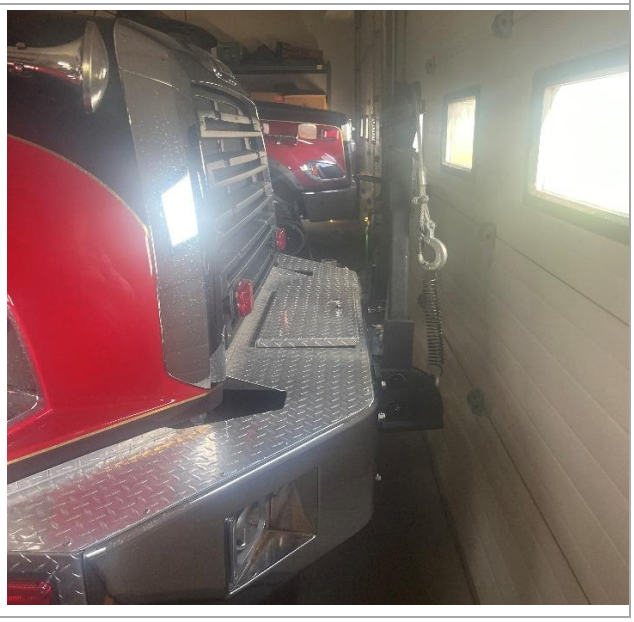
Cost: TBD based on internal resource availability and professional engineering requirements.

Resource: County and Fire Department staff time. PCFS Capital budget

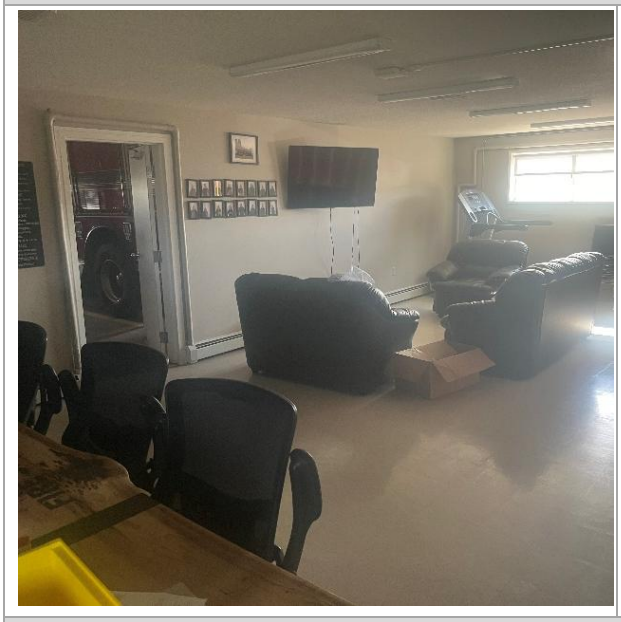
Rationale: *The Tomahawk fire station is continuing to meet the needs of the community; however, an assessment should be completed to determine the life expectancy of this building and the ability to meet the needs of the fire service into the future. Priority to be placed on the prevention of cross contamination throughout the station.*

Apparatus Bay

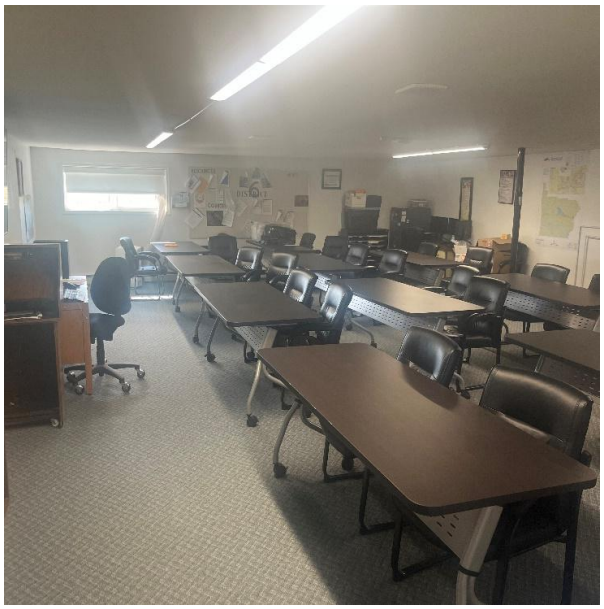


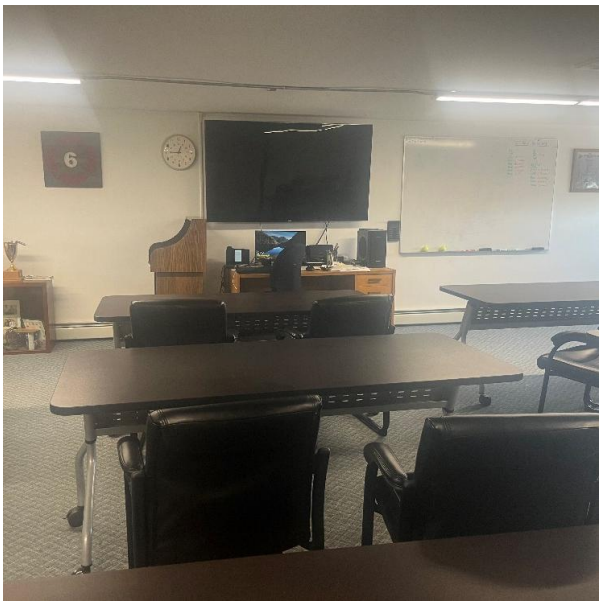
Apparatus Bay	
	
	

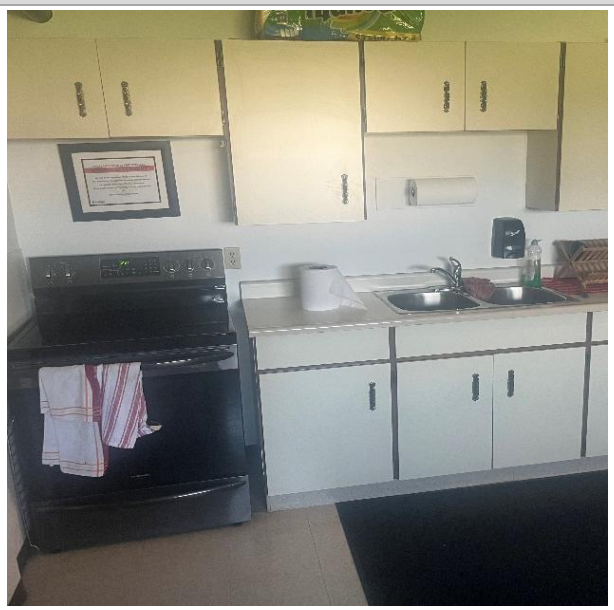
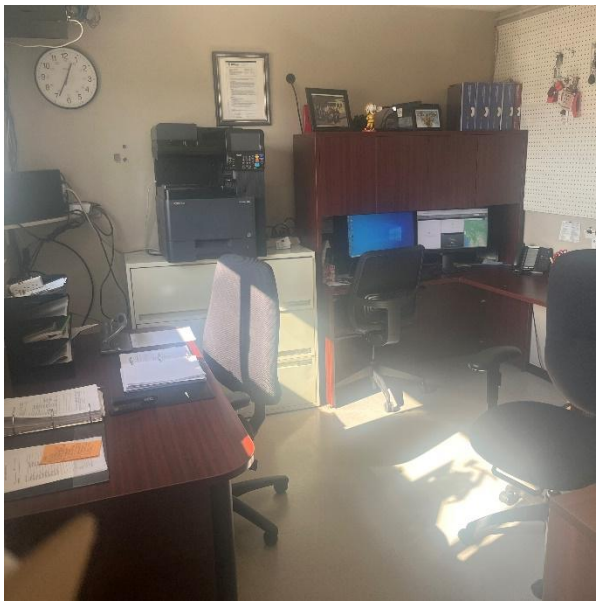
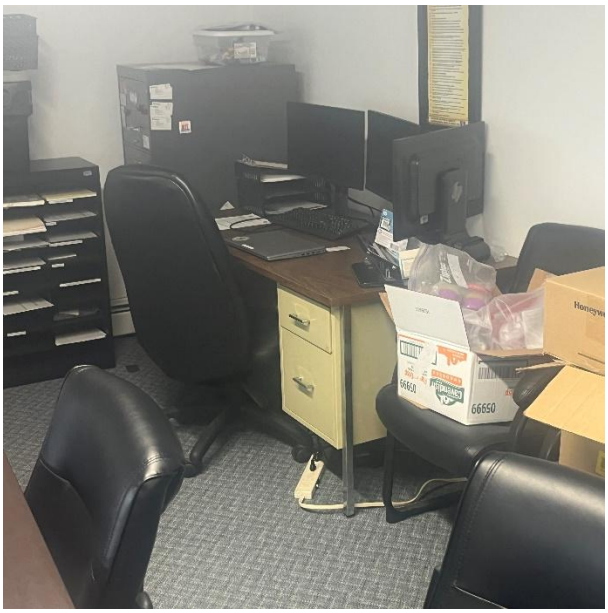
Living Area



Training Room





Kitchen Area	
	
Office Area	
	

3.16.2 Apparatus and Light Duty Vehicles

Fire apparatus and emergency vehicles are typically the largest asset expenditures for any fire department. Purchasing and managing these assets requires strong fiscal responsibility to endure public and local government scrutiny. Currently, PCFS has considerable monies invested in vehicles and equipment. The lifespan of apparatus varies depending on its type and use, along with regular maintenance and testing standards. Fire services typically designate a lifecycle to each piece of apparatus and other emergency vehicles and contribute to a capital reserve fund to ensure enough funds are available when the replacement is needed.

3.16.3 Fire Apparatus Standards

3.16.3.1 National Fire Protection Association (NFPA)

NFPA has developed standards to assist a fire service with the design, maintenance, inspection, testing, life cycling and disposal of the fire apparatus. Fire departments may choose to adopt these standards or utilize them as a reference in their standards and practices. (All the following standards have been consolidated as NFPA 1900 in 2024)

NFPA 1901: Standard for Automotive Fire Apparatus

The NFPA 1901 standard defines the requirements for new automotive fire apparatus and trailers designed to be used under emergency conditions to transport personnel and equipment and to support the suppression of fires and mitigation of hazardous conditions. This standard 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.

NFPA 1911: Standard for the Inspection, Maintenance, Testing and Retirement of In-Service Emergency Vehicles

NFPA 1911 standard defines the minimum requirements for establishing an inspection, maintenance, and testing program. Also included are guidelines for emergency vehicle refurbishment and retirement.

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

D.1 General

To maximize firefighter 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 around safety, fire departments should seriously consider the value (or risk) to firefighters of keeping fire apparatus more than 15 years old in first-line service. It is recommended that apparatus more than 15 years old that has been properly maintained and 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 firefighters 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.

3.16.3.2 Underwriters Laboratories of Canada

Current ULC17 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 four to five years. Of course, this timeline is dependent on the frequency of use, scheduled maintenance, and budgets. As indicated in Table 9 below, 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 a usable life cycle remaining. This condition survey

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

must consider the NFPA and FUS standards along with the maintenance and cost records of the respective vehicle.

ULC utilizes many of the provisions within these standards as part of the Underwriters survey for determining fire insurance ratings for a community. For example, it follows the life cycle program 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.

Table 25: 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 centers 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.			

3.16.3.3 Fire Underwriters Survey (FUS)

The FUS provides insurance grading that may have a direct implication for fire insurance. Fire apparatus is designed specified and tendered based upon the unique requirements of the fire service and the community needs it serves. With the design, specification, tender and procurement processes typically taking two to three years or in recent years even longer, along with the expected life cycles of these apparatus being 20 years or more, it is important that the initial equipment purchase planning decisions accurately reflect both, the identified immediate needs and those anticipated in the future.

3.16.3.4 Apparatus Replacement and Dispersal

Determining the appropriate dollar value required to be placed in a reserve fund to ensure sufficient monies are available at the time of replacement is based on life cycle, forecasted inflation and depreciation. Calculating the yearly contributions is based on the number of years of expected life in the fleet inventory.

As identified above, although both NFPA and FUS have criteria for re-classifying or retiring apparatus, modifications or upgrades may be required based on age or heavy usage. For example:

- Engines and aerials: 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 a review of the current apparatus, a study of the original purchase price minus market depreciation is compared to the anticipated replacement cost, taking into consideration the trend in inflationary increases. The salvage or trade-in value of the original apparatus can be estimated based on industry trends. This value is subject to the following considerations:

- Age of the vehicle
- Kilometres
- General condition
- Certifications
- Annual test results

Through careful analysis, the optimal replacement year can be determined. Table 26 and Figure 5 below shows an example of an apparatus purchased in 2007 with a 25-year replacement timeline. Assumptions need to be determined for a particular piece of apparatus to consider the type of factors above, as well as the type of requirements for the replacement apparatus to meet the needs for the next 20-plus years. Annual reserve contributions should be made to ensure sufficient funds are available at the time of anticipated replacement.

Table 26: Fire Apparatus Life Cycle Cost Projection Example

Period	Year	Replacement cost	Based on %	Difference between original vs replacement	Depreciated value
0	2014	$375,415.05		$0.00	$375,415.05
1	2015	$386,677.50	3.0%	$11,262.45	$300,332.04
2	2016	$398,277.83	3.0%	$22,862.78	$240,265.63
3	2017	$410,226.16	3.0%	$34,811.11	$192,212.51
4	2018	$422,532.95	3.0%	$47,117.90	$153,770.00
5	2019	$485,912.89	15.0%	$110,497.84	$123,016.00
6	2020	$558,799.82	15.0%	$183,384.77	$98,412.80
7	2021	$642,619.79	15.0%	$267,204.74	$78,730.24
8	2022	$684,390.08	6.5%	$308,975.03	$62,984.19
9	2023	$728,875.44	6.5%	$353,460.39	$50,387.36
10	2024	$776,252.34	6.5%	$400,837.29	$40,309.88
11	2025	$826,708.74	6.5%	$451,293.69	$32,247.91
12	2026	$880,444.81	6.5%	$505,029.76	$25,798.33
13	2027	$937,673.72	6.5%	$562,258.67	$20,638.66
14	2028	$998,622.51	6.5%	$623,207.46	$16,510.93
15	2029	$1,063,532.98	6.5%	$688,117.93	$13,208.74
16	2030	$1,132,662.62	6.5%	$757,247.57	$10,566.99
17	2031	$1,206,285.69	6.5%	$830,870.64	$10,000.00
18	2032	$1,284,694.26	6.5%	$909,279.21	$10,000.00
19	2033	$1,368,199.39	6.5%	$992,784.34	$10,000.00
20	2034	$1,457,132.35	6.5%	$1,081,717.30	$10,000.00

Figure 5: Fire Apparatus Life Cycle Cost Projection – EXAMPLE ONLY

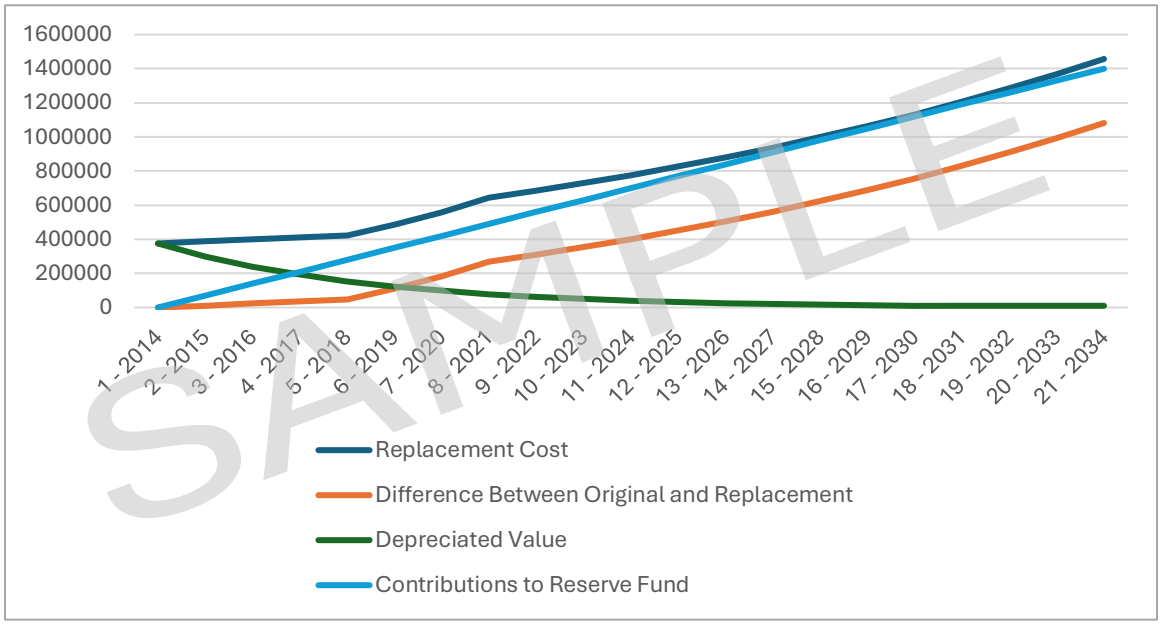


Table 26 and Figure 5 above shows that the monies put into the replacement reserve fund are close to the projected replacement cost in year 15 and require additional contributions to extend past. Note the following key points:

- Five-year increase to replacement cost from 15-20 years = $393,600
- Five-year decrease in depreciation value from 15-20 years = $3,208
- Total increased costs to retain apparatus for additional 5 years (15-20) = $396,808
- Additional contributions to reserve fund $383,600
- Difference between 15 and 20 years is $1,447,132 - $1,050,324 = $383,600 or an additional $79,361 of contribution per year
- Changing from a 15 to 20-year replacement cycle requires $3,968 per year more

Replacement lifecycles for PCFS apparatus are consistent with lifecycles recommended by the FUS body reporting to the Canadian General Insurance (CGI). In addition to the maintenance of a current fleet capable of reliably providing service, favorably meeting insurance guidelines impacts municipal insurance ratings.

Observation #14: PCFS has a number of frontline apparatus that are not included in the current replacement cycle. They include Engine 2, Rescue 2, Tower 5, Red 6, and Engine 7. These apparatus are required in order to continue to provide the current emergency response level of service to the Parkland County.

Recommendation #14: Include the Capital funding necessary for the replacement of Engine 2, Rescue 2, Tower 5, Red 6, and Engine 7 into the Capital apparatus replacement schedule.

Suggested completion: 6-12 months

Cost: Dependant on current market conditions, manufacturer, and supplier

Resources: PCFS Budget

Rationale: *Both Engine 2 and Rescue 2 are the primary emergency response vehicles located at the Parkland Village (District 2) that continues to provide valuable emergency response to the County from a very active paid-on-call staffing model. Tower 5 is housed in the Acheson (District 2) and provides critical functions on the fire ground for master stream elevated fire attack, ventilation, and rescue. There is discussion to replace this piece with a replacement aerial or with multi-purpose quint type of apparatus, however no funding has been allocated for either scenario. Engine 7 is a versatile pumper apparatus (4-wheel drive) responding out of the West Central (District 4). This vehicle has historically provided good access into areas of Parkland that are otherwise very difficult to access with traditional engine/pumper apparatus.*

There is discussion to replace this piece of apparatus with a similar multi-purpose apparatus, however no funding has been allocated for a replacement.

3.16.3.5 Apparatus and Emergency Vehicle Fleet Inventory

The following Table 27 identifies the PCFS apparatus and light vehicles in use, expected life cycle, and anticipated current replacement costs.

(See Appendix E for Apparatus and Light Vehicles Descriptions)

Table 27: PCFS Apparatus and Light Vehicle Life Cycle

No.	Unit Location	Unit number	Year built	In-service month/year	Est. replacement year
1	Acheson	Engine 5 19-076	2013	2013	2033
2	Acheson	Engine 8 19-102	2020	2020	2040
3	Acheson	Rescue 5 19-074	2013	2013	2033
4	Acheson	Tanker 5 19-075	2013	2013	2033
5	Acheson	Tower 5 19-087	2016	2016	NA*
6	Acheson	Squad 5 19-069	2013	2013	2028
7	Acheson	Ranger 5 19-077	2014	2014	2029
8	Acheson	Red 5 19-096	2019	2019	2029
9	Acheson	Red 7 19-083	2019	2019	2029
10	Acheson	MESA 1 19-089	2010	2010	2030
11	Acheson	Tower 5 19-087	2015	2015	NA
12	Acheson Admin	Red 1 19-083	2019	2019	2029
13	Acheson Admin	Red 2 19-105	2020	2020	2030
14	Acheson Admin	Red 3 19-096	2019	2019	2029
15	Acheson Admin	Red 4 19-091	2017	2017	2027
16	Parkland Village	Engine 2 19-093	2018	2018	NA
17	Parkland Village	Tanker 2 19-060	2010	2010	2030
18	Parkland Village	Squad 2 19-068	2013	2013	2028
19	Parkland Village	Rescue 2 19-066	2013	2013	NA
20	Parkland Village	Ranger 2 19-065	2012	2012	2027
21	West Central	Engine 4 19-106	2022	2022	2042
22	West Central	Tanker 4 19-095	2020	2020	2040
23	West Central	Squad 4 19-113	2023	2023	2043
24	West Central	Engine 7 19-034	2002	2002	NA
25	West Central	Tanker 7 19-067	2013	2013	2033
26	West Central	Squad 7 19-063	2011	2011	2026
27	West Central	Rescue Boat 4 19-009	2021	2021	2041
28	West Central	Ranger 4 19-070	2015	2015	2030
29	West Central	Ranger 7 19-085	2015	2015	2030
30	West Central	Fleet 17-881	2022	2022	2032
31	Tomahawk	Engine 6 19-103	2021	2021	2041

No.	Unit Location	Unit number	Year built	In-service month/year	Est. replacement year
32	Tomahawk	Tanker 6 19-107	2022	2022	2042
33	Tomahawk	Squad 6 19-090	2017	2017	2031
34	Tomahawk	Rescue 6 19-081	2015	2015	2034
35	Tomahawk	Ranger 6 19-084	2015	2015	2030
36	Tomahawk	Red 6 19-064	2011	2011	NA
37	Stony Plain	Rescue 3 19-080	2014	2014	2034
38	Stony Plain	Squad 3 19-078	2014	2014	2029
39	Stony Plain	Engine 3-1 19-101	2019	2019	2039
40	Stony Plain	Tanker 3 19-035	2004	2004	2026
41	Stony Plain	Engine 3 19-049	2020	2020	2040
42	Devon	Engine 1 19-112	2024	2024	2044
43	Devon	Squad 1 19-079	2014	2014	2029

**Engine 2 and Rescue 2 are not included in the current replacement plan.*

***Engine 7 19-034 – This 4-wheel drive engine has been taken out of the replacement cycle and is being considered for a replacement of a suitable multi-purpose engine that would need to be added into the replacement schedule.*

3.16.4 Ancillary Equipment

Equipment needed for field response operations such as vehicle extrication tools, hand tools and air exchange fans, etc. are current and appropriate for the needs of PCFS. The ancillary equipment is designed and maintained to meet the department's current core service, goals, and objectives. PCFS Equipment has various replacement cycles depending on equipment type and usage. As the response needs change or grow, additional equipment to match the service must be considered.

3.16.5 Specialized Rescue Equipment

As most fire services respond to a wide range of emergency situations in their community, many of those require some degree of specialized equipment that is appropriate for each incident. Some of this equipment is not routinely used on a day-to-day basis, and require regular testing, calibration, and practice with to ensure they perform as intended when required. PCFS rescue equipment is regularly tested, evaluated, and currently meets the goals and objectives of the department.

3.16.6 Rescue Tools

Effective and efficient response to an incident requires equipment designed for a specific purpose. PCFS responds with specialized equipment to incidents involving motor vehicles or other incidents requiring the use of manual or hydraulic rescue tools. This equipment is typically kept on the engine or rescue truck. PCFS rescue equipment is well maintained, tested, and repaired, of replaced as necessary.

3.16.7 Wildland Firefighting

PCFS apparatus and speciality vehicles carry a wide range of wildland fire fighting equipment including portable pumps, hose lines, sprinklers, and hand tools. This equipment is replaced as necessary and is appropriate and sufficient for the needs of the department. Additional equipment can be requested from partner fire services and/or Alberta Wildfire.

3.16.8 Water/Ice Rescue

The PCFS rescue boat, equipment and PPE is housed and primarily responding out of the West Central fire station. This equipment is well tested and maintained and is appropriate to the service being delivered.

3.16.9 Dangerous Goods

PCFS maintains an inventory of equipment and supplies to identify, isolate, and manage the majority of dangerous goods incidents that they encounter. For larger or more complex dangerous goods incidents PCFS will request support from industry, private contractor or support from Edmonton Fire Rescue that maintains a technical dangerous goods team.

3.16.10 Small Equipment Maintenance and Repair

All PCFS small equipment is regularly tested, calibrated, maintained, and repaired in accordance with manufacturers processes.

3.16.11 Personal Protective Equipment

All PCFS firefighting personnel are supplied with NFPA, NIOSH and CSA approved personal protective equipment (PPE) including turnout (bunker gear), gloves, helmets, boots and any specialized gear for specific rescue and EMS operations. PCFS utilizes a third-party vendor for cleaning and maintenance program in compliance with *NFPA 1971: Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting* for the health and safety of their firefighters.

Fire retardant coveralls, safety helmets, gloves, masks, and other equipment necessary for wildland firefighting is supplied and replaced as necessary to all PCFS firefighting personnel. The PPE provided is current, appropriate, and designed to meet the department's safety goals and objectives.

3.17 Asset Management

PCFS uses an internal asset management software program to track their assets including:

- Small equipment and PPE testing, repair, and replacement
- Daily vehicle and equipment checklists
- Commercial Vehicle Inspection schedules

Parkland County Fleet Services maintains the management of the PCFS apparatus and light vehicle maintenance and repair.

Note: *PCFS is in the process of changing the vendor for their asset management and tracking software.*

3.18 Firefighter Health and Wellness

The active pursuit of employee/member health and wellness is extremely important to an organization. The benefits may include but are not limited to:

- Early recognition and treatment of illness
- Reduction in absenteeism due to short/long-term illness
- Decreased injuries during normal duties
- Decreased workers compensation board (WCB) premiums
- Increased employee career longevity
- Improved work/life balance

PCFS participates in the Parkland County health and wellness program, including representation of two OFR members (one captain and one deputy chief) on the OHS committee. PCFS staff have access to psychologists for incident de-brief sessions and contracted services.

The mental health of first responders is an issue which has garnered considerable attention over the past 10 years. As identified in the Wellness, Fitness Initiative (WFI) Manual (Pg.48, Joint Labor Management Wellness-Fitness Initiative, 4th Edition), "a firefighter's work is characterized by long hours, shift work, disruptions in sleep patterns, sporadic high intensity situations, strong emotional involvement, life and death decisions and exposure to extreme human suffering." Over time, this type of work can impose considerable stress on some individuals.

3.19 Rehab and Decontamination

All PCFS personal are expected to perform a gross contamination of themselves and their equipment on scene if possible. A more thorough decontamination must occur as soon as practical based on the nature of the incident. Procedures are in place within PCFS to ensure all personnel are properly rehabilitated including medical assessment, rest, and nourishment as necessary.

SECTION 4
RESPONSE STATISTICS AND PERFORMANCE

The following section provides an overview of incident and response frequency, relevant fire service legislation and NFPA standards, as well as a summary of emergency response performance for incidents within Parkland County. Activity outside of the county limits was not included in this section unless specifically identified in a particular section.

4.1 Industry Leading Practices and Standards

While communities in Alberta are not required to provide fire protection services, most municipalities provide fire and rescue services directly or through contracted services. This section provides an overview of the GoA regulatory framework and NFPA service standards used to inform the development of fire department response performance and service levels.

In Canada, and in particular Alberta, leading practices and standards considered by the fire service industry when planning effective and efficient service delivery include the following sources:

- Alberta Occupational Health and Safety, Guide for Firefighting, 2019
- Municipal Government Act, September 1,2020
- Alberta Building Code Limiting Distance and Fire Response Requirements
- Alberta Safety Codes Act, July 23, 2020
- National Building Code-2019 Alberta Edition, NBC(AE)
- Commission on Fire Accreditation International
- Canadian Standards Association (CSA)
- Fire Underwriters Survey (FUS)
- National Fire Protection Association (NFPA)
- Underwriters Laboratories (UL/ULC)

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.

4.1.1 Alberta Occupational Health and Safety Guide for Firefighting

In March of 2019, Alberta Occupational Health, and Safety (OHS) released a new bulletin the "Occupational health and safety (OHS) guide for firefighting". This bulletin replaced the former Code of Practice for Firefighters 2007. The bulletin describes the minimum standards a fire service must achieve to be compliant with OHS legislation.

The document is intended to be a guide to assist in developing standard operating procedures and guidelines meeting NFPA standards and industry best practices. It states:

The guidelines and policies developed should include, as per National Fire Protection Association (NFPA) standards:

- *Services to be offered, including functions that must be performed simultaneously*
- *The minimum number of firefighters required to safely perform each identified firefighting function or evolution*
- *The specific worker safety rules, procedures, first aid and medical attention services for firefighters to be followed at each type of incident*
- *The number and types of firefighting vehicles, equipment and firefighters required for the initial response to each type of emergency to which firefighters might reasonably be expected to respond*
- *This includes policies or procedures to be followed when minimum staffing or equipment levels cannot be met*
- *Guideline or policy on the minimum amount of training and experience a firefighter must be given before being considered competent to perform certain emergency operation functions*
- *detailed description of the incident management system to be followed at an emergency incident; and a detailed description of the personnel accountability system to be used at each incident*

The guideline provides the requirements for managing hazardous materials, working in confined spaces, general safety requirements, emergency preparedness, fall protection, PPE and additional elements of hazards found in the firefighting environment. A detailed description of the OHS requirements is outlined in this document to ensure safe work practices are in place for all firefighters, including their physical and mental health.

4.1.2 Alberta Building Code Limiting Distance and Fire Department Response Requirements

The National Building Code-2019 Alberta Edition, NBC(AE) defines the relationship between fire department response time and limiting distance as follows:

9.10.15.3 Limiting Distance and Fire Department Response

1) *Except for the purpose of applying Sentences 9.10.15.2.(2), 9.10.15.4.(3) and 9.10.15.5.(13), a limiting distance equal to half the actual limiting distance shall be used as input to the requirements of this Subsection, where*

1. *a) the time from receipt of notification of a fire by the fire department until the first fire department vehicle capable of beginning suppression activities arrives at the building exceeds 10 min in 10% or more of all calls to the building, and*
2. *b) any storey in the building is not sprinklered.*

A-3.2.3.1.(8) Intervention Time and Limiting Distance. *The total time from the start of a fire until fire suppression by the fire department depends on the time taken for a series of actions. Sentence 3.2.3.1.(8) is only concerned with the time from receipt of notification of a fire by the fire department until the first fire department vehicle capable of beginning suppression activities arrives at the building. It specifies a 10-min time limit which must be met in more than 90% of the calls to the building served by the fire department...The standard requires that the fire department establish a "performance objective" of not less than 90% for each response time objective."*

A 2009 Code interpretation provided by the National Building Code-2019 Alberta Edition, NBC(AE) and standards in Standata 06-BCI-025 defines the response time as,

The terminology as noted in Sentences 3.2.3.1.(8), 9.10.14.3.(1) and 9.10.15.3.(1) is interpreted to have the following meanings:

"Receipt of notification of a fire" - means the point in time that the fire dispatcher (who may or may not also be the 911 call taker) first receives the request for fire suppression assistance. The fire dispatcher is the person who directly notifies fire crews of the need to respond and whose actions are within the control of the fire department through direct employment, a shared services agreement or contract.

Note: *this timeframe does not include any call handling or call transfer time by 911 operators or alarm monitoring company personnel.*

"Arrives at the building" – means the point in time that a rated fire department engine (i.e., pumper) capable of beginning exterior exposure protection and suppression activities arrives at the scene of the fire staffed with a crew of firefighters in accordance with local municipal policy.

4.2 National Fire Protection Association Standards

The most widely accepted standards for the fire service are developed by the NFPA. Established in 1986, "the NFPA is a self-funded non-profit organization devoted to eliminating death, injury, property and economic loss due to fire, electrical and related hazards (NFPA, 2021)." The NFPA has developed over 300 consensus-based codes and standards designed to improve fire department effectiveness and firefighter safety. NFPA research is applied in establishing industry benchmarks for fire department operations, training, and equipment. Several of these standards form the basis and are referenced National Building Code-2019 Alberta Edition, NBC(AE) and Alberta OHS Guide for Firefighting.

The NFPA has done considerable research in developing standards and ensuring they reflect the primary value of life safety in emergency response for responders and victims. They are referenced in both the Alberta OHS regulations for firefighters and the National Building Code-2019 Alberta Edition, NBC(AE). NFPA standards were developed for firefighting operations and response performance objectives for POC/volunteer fire departments such as Parkland County Fire Services. The standard addressing fire department operational performance and service levels is NFPA 1720: Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by POC/Volunteer Fire Departments.

Additionally, NFPA 1225: Emergency Services Communications will be referenced to assess alarm handling performance. Further NFPA 1201: Standard for Providing Emergency Services to the Public outlines leading practices in establishing and managing an effective and efficient fire service. It provides standards regarding governance, organizational structure, planning, and fire department resource deployment.

The level of compliance with these response standards will be assessed in Section 4.4 Emergency Response Performance. According to NFPA, the benchmark for determining which standard to apply to a particular community is when 85% of firefighters are career, the 1710 standard shall be used. Given that PCFS does not meet that threshold of 85% career staff over the study period, NFPA 1720 is the primary standard that will be applied in this analysis although references to NFPA 1710 will be included for context when appropriate.

4.2.1 NFPA 1720

NFPA 1720: Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments, response standards provide a basis to evaluate the PCFS's response performance. The response standards outlined in NFPA 1720 are based on a low to medium risk typical single-family dwelling of 2000 ft^2 (186 m^2) without a basement and with no exposures. Alarm answering should be completed within 15 seconds 90% of the time. Alarm processing should be completed within 64 seconds 90% of the time.

Table 28: NFPA 1720 Staffing and Response Time Standards illustrates how NFPA acknowledges the relationship between population density, travel distances and fire department service levels. As density and distance increase, so does the prescribed service level.

It is important to understand that Parkland County has variation of demand districts with varying population densities and demand districts risks, even if they are not specifically defined today. Therefore, it is completely acceptable for the authority having jurisdiction to establish service levels which vary across the county depending on identified risks within a demand districts. Further, the responsibility to understand community expectations and to determine an appropriate level of service and investment in fire services rests with County Council.

Table 28: NFPA 1720 Staffing and Response Time Standards

Demand Zone[a]	Demographics	Minimum staff to respond [b]	Response time (minutes)	Meets Objective (%)
Urban area	>1000 people/2.6km^2	15	9	90
Suburban area	500-1000 people/2.6 km^2	10	10	80
Rural area	<500 people/2.6 km^2	6	14	80
Remote area	Travel distance ≥ 12.87 km	4	Directly dependent on travel distance	90
Special risks	Determined by AHJ	Determined by AHJ based on risk	Determined by AHJ	90

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

4.2.2 National Institute of Standards and Technology (NIST)

The NIST Fire Research Division is a U.S. physical science laboratory that through its programs in measurement, prediction, systems integration, and the dynamics of fire and its interactions with the built and natural environment. NIST provides leadership for advancing the theory and practice of fire safety engineering, firefighting, fire investigation, fire testing, fire data management, and intentional burning.

NIST developed a comprehensive report that 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.

4.3 Fire Underwriters Survey

The Fire Underwriters Survey (FUS) provides data, underwriting, risk management and legal/regulatory services focusing on community fire-protection and fire prevention systems in Canada. FUS publishes the Canadian Fire Insurance Grading Index which is utilized by the property casualty insurers. This grading will establish the basis for insurance companies in determining fire insurance premium rates. FUS provides the following assessments the following:

- Fire department response - includes apparatus, distribution of companies, staffing, training, maintenance, pre-incident planning, etc.
- Fire safety control - includes review of all fire prevention and public education activities. The overall needs of these programs are determined with the aim of reducing the number of fires within the community. All activities should be measured for their effectiveness.
- Municipal building stock - includes details such as size, construction, exposures, occupancy types, and fire protection systems. These lay the foundation of a municipal risk assessment and assist to determine a community's fire station, apparatus, and staffing needs.
- Water system capacity and distribution for public fire protection - includes an emphasis on the system’s ability to reliably deliver adequate water to control major fires throughout the municipality. The amount of water is available to the fire department is the critical test in the evaluation.

FUS provides an overall 'point in time' assessment of the community's fire service capabilities. Improving FUS ratings may reduce residential, commercial, and industrial fire insurance premiums. Our research suggests FUS ratings have a greater impact on insurance premiums for industrial occupancies. The impact on insurance premiums must be carefully evaluated as the industry is very competitive and premiums can be adjusted regardless of the fire department's capabilities and FUS ratings.

4.4 Incident Type and Frequency

Fire and rescue services typically have access to large amounts of incident and response data. Incident data can be used and reported for several purposes. Incident type and frequency data are used to analyze department activity levels and identify trends in demand for fire services. The breadth of services provided by modern fire services is often surprising. Fire departments have evolved from responding primarily to fires to responding to a broad range of public service and emergency incidents, becoming a critical component of a community's social safety net.

Incidents are commonly evaluated at two different times during an emergency. First, the 911 call taker evaluates the information provided by the caller to categorize the incident to be dispatched. This category can determine the initial number of resources assigned to the incident, including firefighters, apparatus, and automatic aid from neighboring fire stations. The second categorization occurs after the incident is resolved, based on what was occurring on the scene or the actions taken.

Incident data is typically categorized and used to identify trends in services provided in a community. For example, fire incidents may be categorized into specific fire types such as brush, chimney, garbage dumpster, cooking, or vehicle fires. This level of detail is useful to a fire chief in analyzing community risk and service requirements. It may also be useful in identifying specific fire prevention and public education opportunities.

Incident data may also be summarized into broader categories to provide a more general report on activities undertaken by the fire department. For example, all types of fires may also be combined in a single category along with other broad categories such as rescue, motor vehicle and medical incidents to provide a general report of fire department activity to the public or elected officials. Table 29: Incident Count by Category provides an overview of incident counts by broad incident categories. This information is useful in quantifying general community risks and fire department activity.

Table 29: Incident Count by Category (2019-2023)

Incident Type	2019	2020	2021	2022	2023	5-year
Motor Vehicle	327	307	330	361	349	1674
False Alarm	188	223	172	203	244	1030
Fire	157	175	322	194	272	1120
Hazardous material	20	30	17	18	31	116
Medical	110	63	70	107	92	442
Other	57	61	88	51	72	320
Total	859	859	999	934	1060	4702

The following key observations regarding incident types were noted:

- *Motor vehicle incidents were the most frequent representing 35.6 % (1674) of all incidents.*
- *Fire incidents are the second most common incident type at 23.8%. These peaked at a high of 322 incidents in 2021 and was 267 incidents in 2023*
- *Hazardous Materials, Medical, and Other (such as gas leak, public service, complaint/controlled burn) occurred with approximately the same frequency over this 5-year period*
- *False Alarms was representing the third highest incident category at 21.9% (1030) of all incidents.*

Chart 2: Incident Frequency by Percentage (2019-2023) provides a five-year aggregated analysis of the incident categories.

Chart 2: Incident Frequency by Percentage (2019-2023)

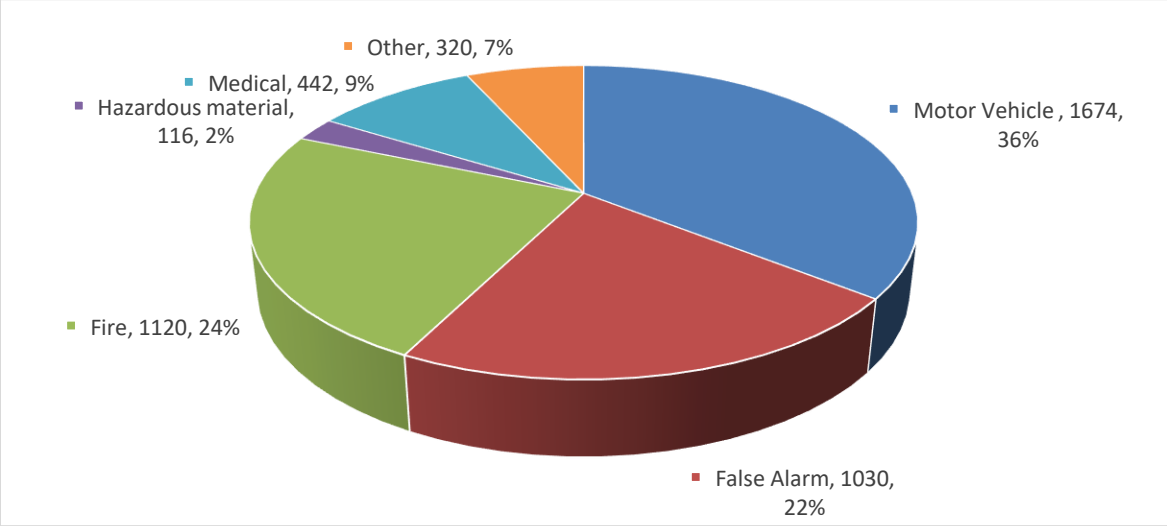
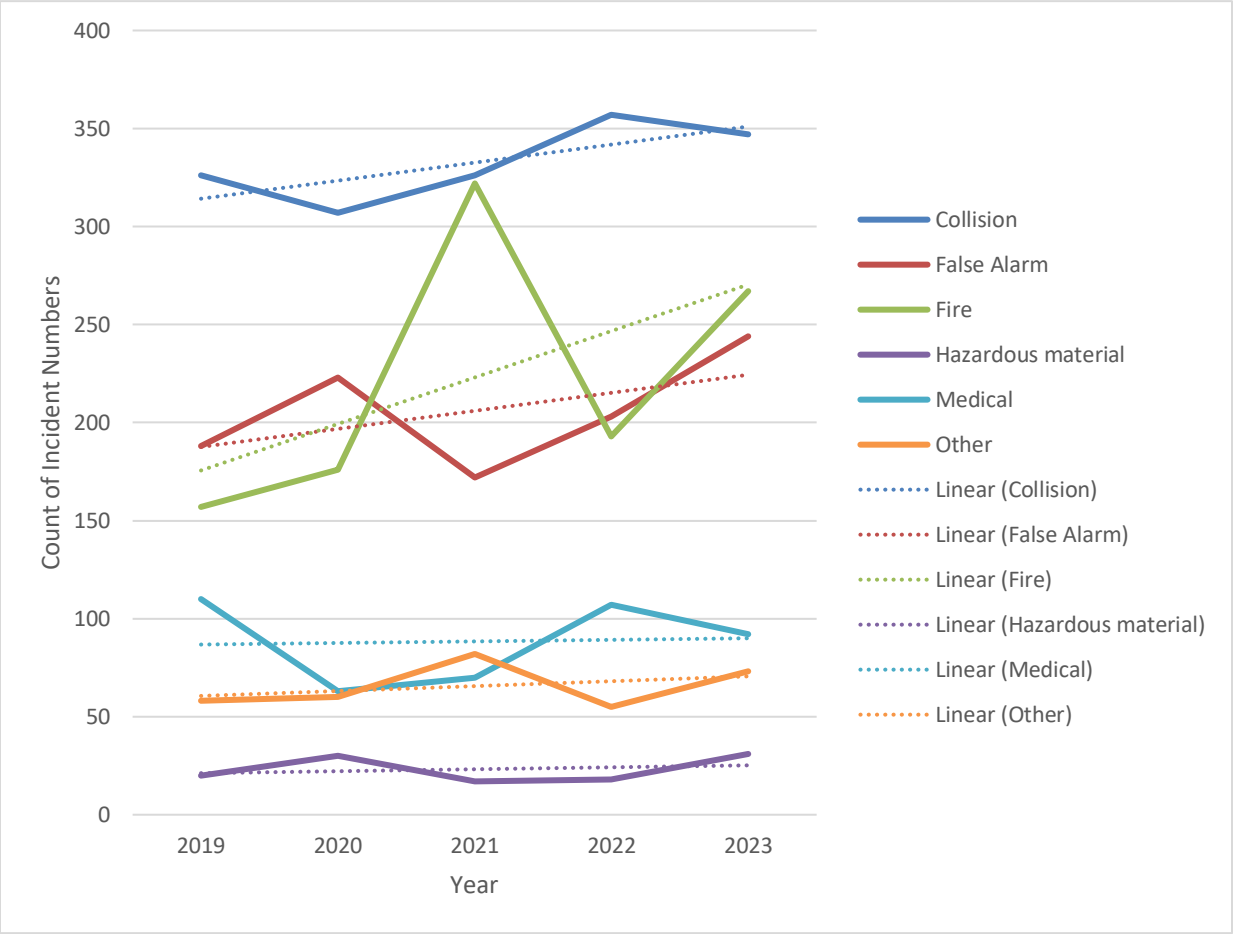


Chart 3: General Incident Trends identifies which incident types were increasing (trending upward), decreasing (trending downward) or unchanged (flat trend line). This information can be used to identify emerging or declining community risks, or the need to change core services and service levels.

Chart 3: General Incident Trends



The following key observations regarding incident types were noted: Motor Vehicle Collisions, False Alarms and Fire incidents are all trending higher.

All other categories of incidents were relatively unchanged during this period.

Table 30 Incident Count by Subcategory (2019-2023) expands the broader incident types into subcategories. This information provides greater detail into specific types of incident categories.

Table 30: Incident Count by Subcategory (2019-2023)

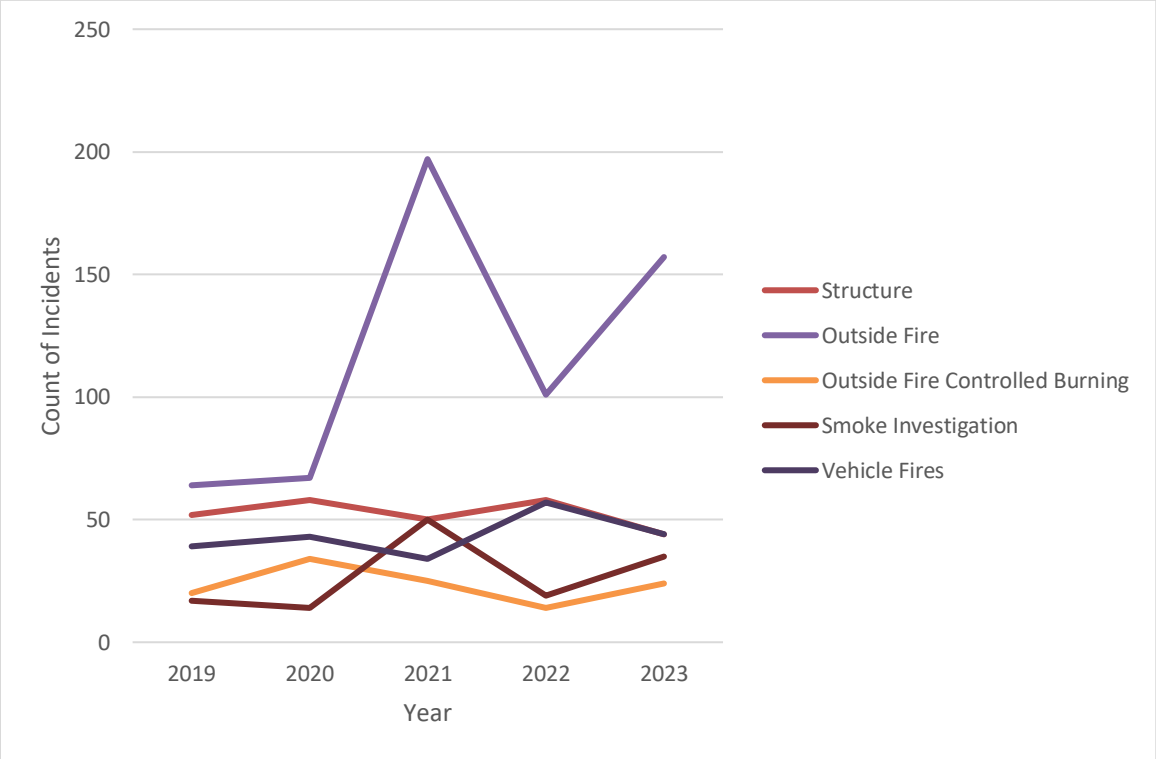
Incident Type	2019	2020	2021	2022	2023	Total
Medical Co-Response	110	63	70	107	92	442
False Alarm	188	223	172	203	244	1030
Hazardous Materials						
Gas Leak/ Gas Odor	12	23	10	11	24	80
Fuel Spill	3	5	5	3	3	19
Hazmat	5	0	2	3	4	14
Odor	0	2	0	1	0	3
Other Requests for Service						
Aircraft Emergency	1	0	0	0	1	2
Train and Rail Fire	0	1	1	0	0	2
Lightning Strike	0	0	0	0	1	1
High Angle Rescue	1	1	4	1	2	9
Bomb Threat	0	0	0	1	0	1
Suspicious Package	0	0	0	1	0	1
Water Rescue	7	9	12	4	4	36
Watercraft in distress	3	7	4	3	7	24
Contracted services RCMP	5	2	5		1	13
contracted services Utilities	0	0	0	1	0	1
Contracted services / Assist Outside Agency	6	11	20	10	13	60
Citizen Assist / Service	25	13	11	18	16	83
Elevator/ Escalator	1	0	0	0	2	3
Electrical Hazard	8	17	22	12	25	84
Other not identified	0	0		0	0	9
Motor Vehicle Incidents						
Motor Vehicle Collision	286	263	291	299	302	1441
Vehicle Fire	39	43	34	57	44	217
Extrication	1	0	4	4	2	11
Train rail Collision	1	1	1	1	1	5
Fire						
Outside Fire	64	67	197	101	157	586
Structure Fire	52	58	50	58	56	274
Smoke Investigation	17	14	50	19	35	135
Outside Fire -Controlled Burn	20	34	25	14	24	117
Explosion	4	2	0	2	0	8
Total	859	859	999	934	1060	4702

The following key observations regarding incident subcategories were noted:

- *Outside fires account for more than double (586) of all fire incidents (1120)*
- *Motor Vehicle Collisions are 86% (1441) of all Motor Vehicle Incidents.*
- *Electrical Hazard (84) and Citizen Assist/ Service (83) are most frequent sub-type under Other Requests for Service*

Municipal fire departments were implemented in the 19th and 20th centuries to manage large fire conflagrations which had the potential to destroy entire communities. Modern building codes and fire inspection programs have reduced community risk from fires presented in years past. However, fire incidents continue to occur. They represent one of the greatest risks of injury to both the firefighters and the public, and property loss. Furthermore, fire incidents typically require a prompt response from a larger number of firefighters and apparatus to manage safely. Therefore, fire incidents warrant specific consideration throughout this FSMP.

Chart 4: Dispatch Initial Incident Classification of Fires (2019-2023)

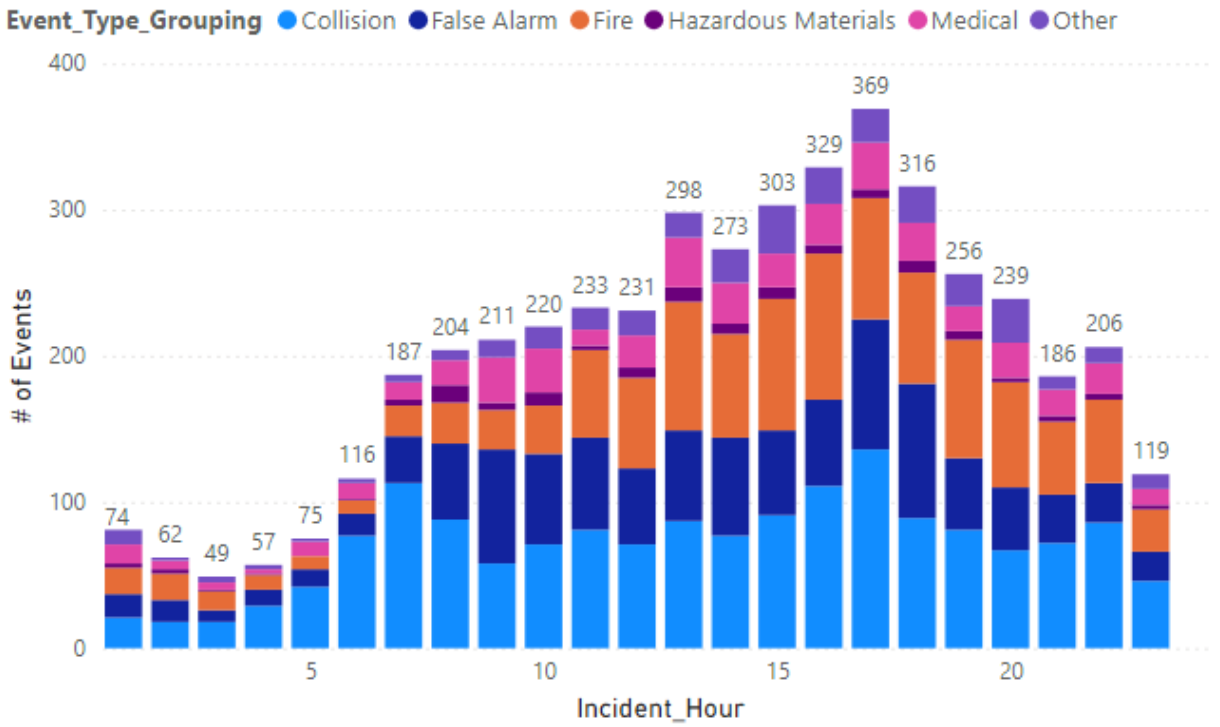


The following key observations regarding fire-related incidents were noted:

- *Outside fires peaked in 2021 and are increasing again in 2023.*
- *Structure and vehicle fires have remained relatively stable over the five-year period.*
- *Outside fire-controlled burning, and smoke investigations remained relatively unchanged and infrequent.*

Chart 5: Incidents by Time of Day (2019-2023) considers the time-of-day incidents occurred during this five-year period. Fire and rescue departments typically experience the highest period of demand for services throughout the daytime hours. It is useful to occasionally monitor peak periods of demand to assess service levels and staffing requirements when demand is the highest and lowest.

Chart 5: Incidents by Time of Day (2019-2023)

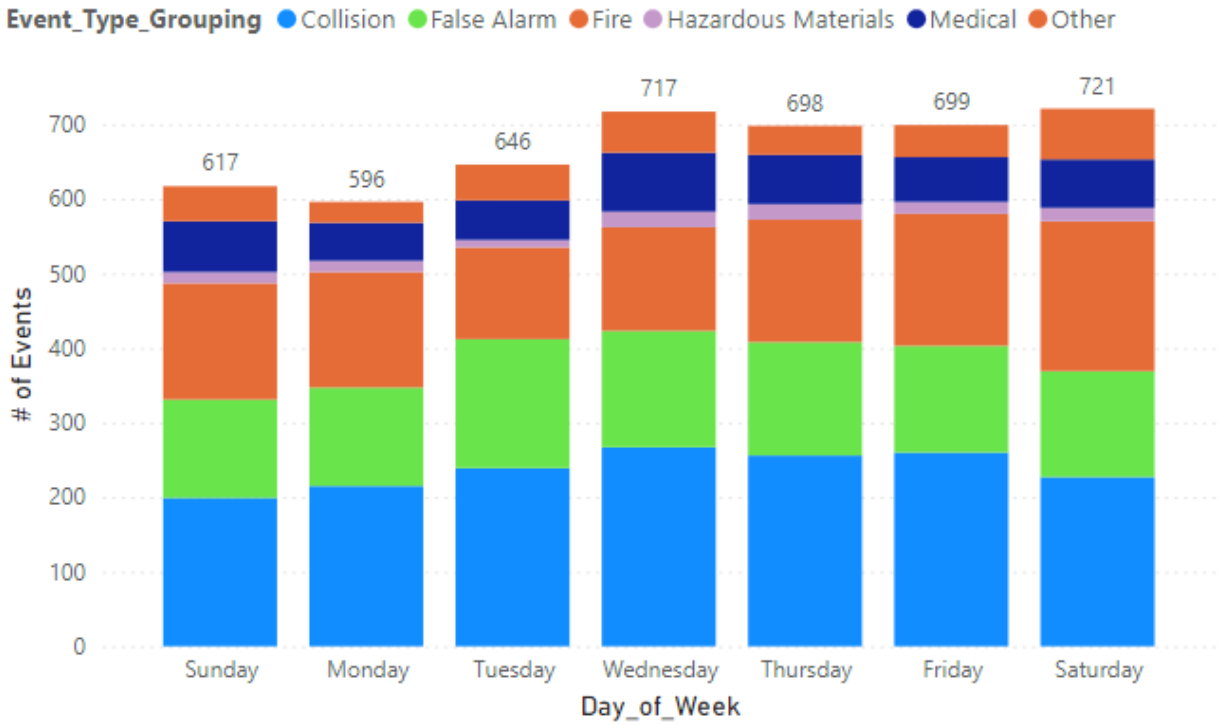


The following key observations regarding the time-of-day incidents occurred were noted:

- *The peak period of demand was noted between 1 pm and 5 pm*
- *The period between 11 pm and 5 am is the lowest period of demand for services.*
- *The periods between 7 am to 12 pm and 7pm to 10 pm remain fairly constant.*

Chart 6: Incidents by Day of Week (2019-2023) identifies the demand for services by the day of the week. Monitoring the days of the week during which PCFS experiences the highest and lowest demand provides additional insight into potential pressures on in-service delivery.

Chart 6: Incidents by Day of Week (2019-2023)



The following key observation regarding the day of week incidents occurred was noted:

- *Monday is the slowest day of the week at 596 incidents*
- *Wednesday through Saturday are the busiest stretch with incidents peaking on Saturday at 721 incidents.*

Incident data provides insight into the type and frequency of specific risks within a community. However, it is limited in the sense that it does not address the effectiveness of the response to emergencies. Emergency response performance is assessed from two perspectives – the speed or timeliness of the initial response and the time taken to assemble all the resources necessary to safely manage an emergency incident. The following section provides an assessment of these two measures of emergency response performance.

4.5 Incidents by Fire District

The districts identified are serviced by various stations, including 4 stations from Parkland County and 3 stations from neighbouring departments. Map 3 identifies the fire district areas of each of the stations.

Map 3: Fire Districts

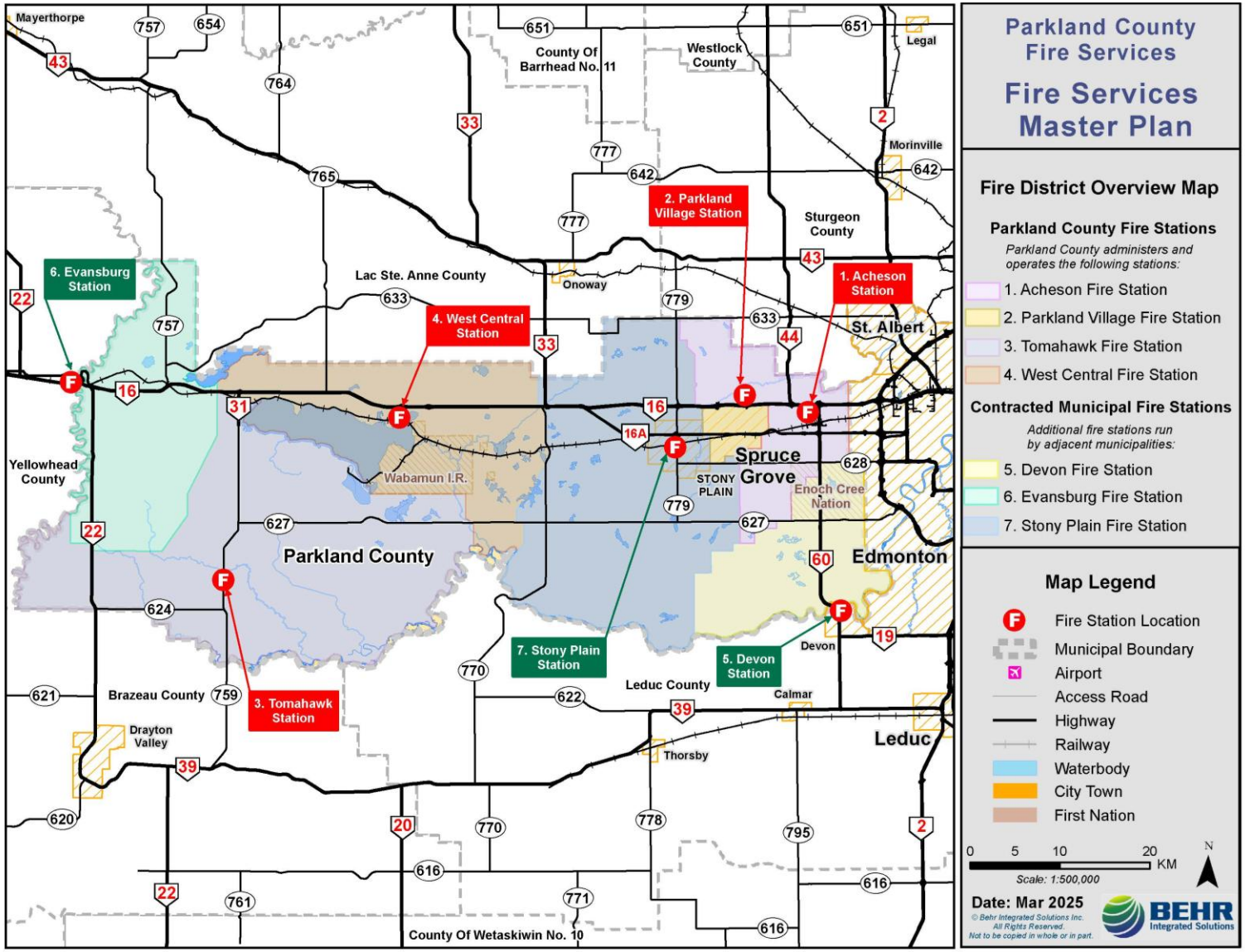


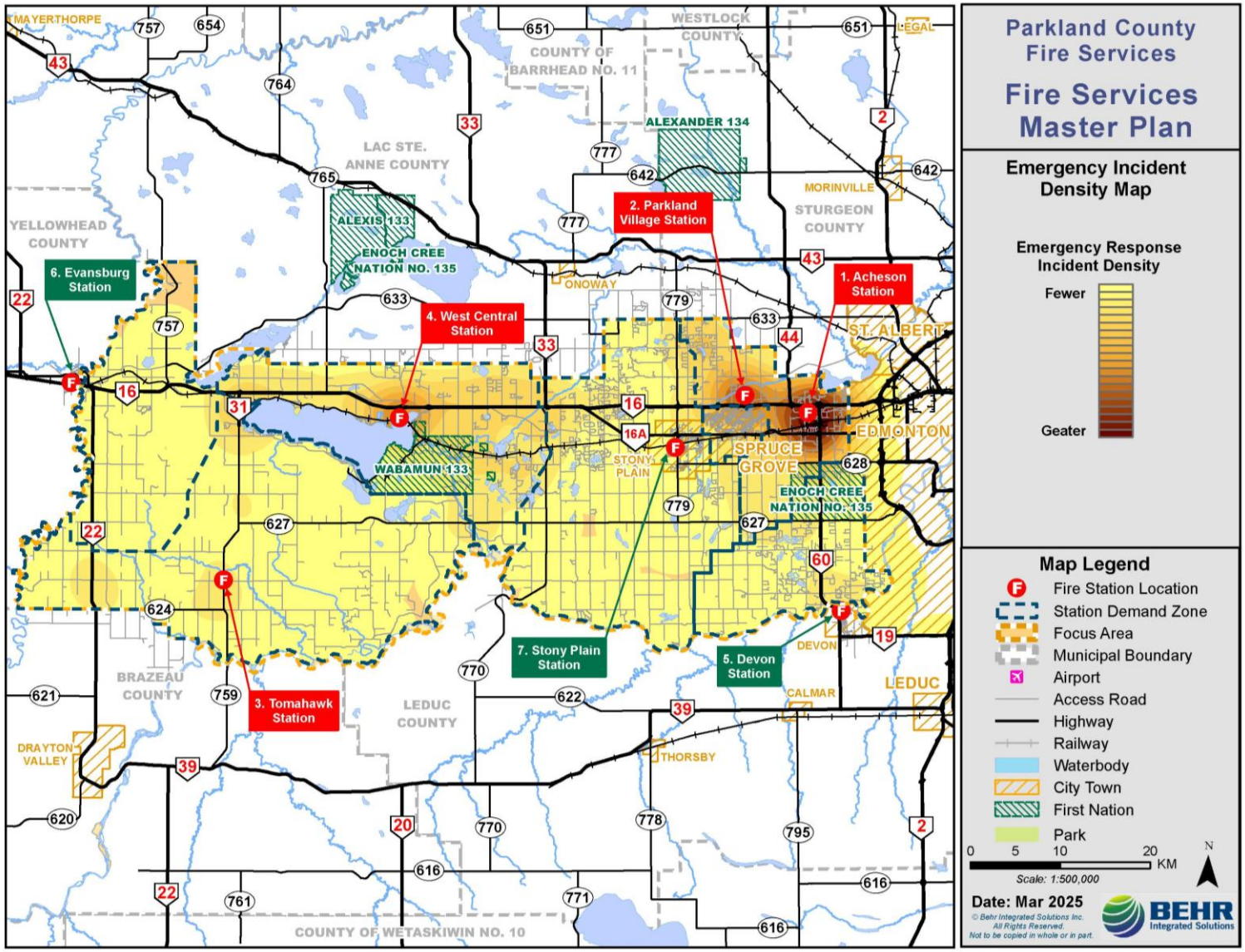
Table 31: Incident totals by district

District	2019	2020	2021	2022	2023	Total
Responses to External Agencies	72	72	40	46	68	298
District 1: Devon	83	80	90	112	117	482
District 2: Acheson & Parkland Village	275	255	289	273	356	1448
District 3: Stoney Plain	223	243	242	260	263	1231
District 4: Wabamun	96	105	156	166	144	667
District 5: Yellowhead County	35	31	34	30	38	168
District 6: Tomahawk	29	37	87	42	63	258
District 7*: Combined w/District 4 in 2022	46	36	51	3	4	140

Note: *District 7 was combined with district 4 in 2022*

Map 4 shows the incident density indicating that the majority of calls occur in the Acheson Station area and expands to the north of the Parkland Village station. Some minor density is observed around the West Central Station (Wabamun).

Map 4: Incident density



4.6 Observations by Fire District

District 2 (Acheson/ Parkland Village) responds to the highest number of incidents (1448) over a fire year period, averaging approximately 290 calls annually. Motor vehicle incidents being the most common incident responded to (533) followed closely by false alarms (441), which is reasonable given the large industrial area covered on the east area of the county.

District 3 (Stony Plain) responds to the second highest number of incidents (1231) over a five-year period, averaging 246 calls annually. Motor vehicles incidents being the most common incident responded to (522).

District 5 (Yellowhead County) responded to the least number of incidents (168) over a five-year period, averaging approximately 34 calls annually. Motor Vehicle Incidents represent the highest number of emergency calls.

Incidents over the years across the districts are predominantly stable with increase occurring in District 2 for 2023.

4.7 Intervention Time and NFPA 1720 Response Standards

The following sections provide an overview of the importance of a prompt intervention time and an analysis of the PCFS response performance to emergency incidents within the municipality.

4.7.1 Intervention Time

Total intervention time is the elapsed time between the incident occurring and the time incident management begins. The discovery of the incident and initiation of the emergency response system begins typically by calling 911. From a community perspective, the time to discover a fire is partially manageable by implementing cyclical alarm system inspections and promoting residential fire alarms and sprinkler systems.

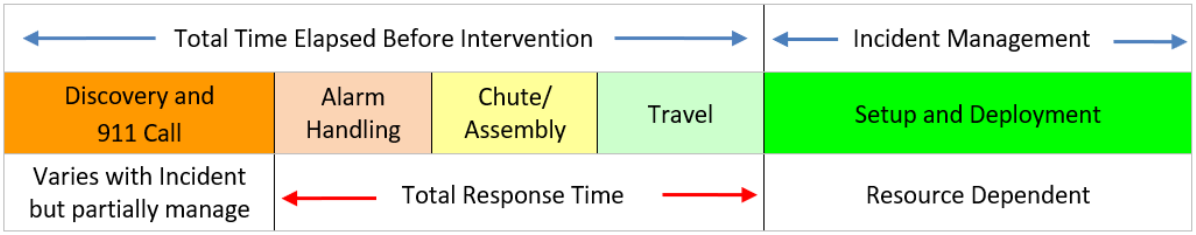
After the 911 call is made, the emergency response system is engaged to manage the incident and minimize its impact. The system is composed of an emergency dispatching centre and the first responding agency. The main purpose of the emergency response system is to respond to and manage emergency incidents as quickly and safely as possible. As a result, the time taken to get relevant caller and incident information (alarm handling time), notify first responders and have them prepare to respond (assembly time), and drive to the incident (travel time) are all critical elements of an effective response. These processes are the focus of this section and are the key indicators of total response time performance.

Incident management time is variable and depends on the type of incident and the resources required to safely manage it. Fire department resource availability is determined by the concentration (how many and what types of resources there are in one

station) and distribution (where are those resources located relative to the incident) of fire department equipment and firefighters. Resource requirements are based on community risks. An adequately resourced response system should provide an effective response force (ERF) to safely manage commonly known risks as effectively and efficiently as possible.

Figure 6 provides an overview of the incident intervention timeline. The definitions and descriptions of the actions taken in each time segment are provided below.

Figure 6: Response Time Continuum



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

Emergency 911 Call: This is the time taken to dial 911 and notify the 911 call centre of the need for emergency services.

Alarm Handling: This is the time segment that begins when the 911 call is answered and ends with the notification of firefighters. It includes the time taken to answer the 911 call and transfer it to the appropriate dispatcher (NFPA reference: alarm answering), and for the dispatcher to get the necessary information and notify the fire department (NFPA reference: alarm processing).

Assembly (Chute) Time: This time segment begins when dispatch notifies the firefighters and ends when the response vehicle leaves the station for the response. Time is required for firefighters to dress in proper PPE and safely leave the station.

Travel Time: This time segment begins when an apparatus leaves the station or otherwise begins the response to the scene of the emergency and ends at the time when the assigned vehicle arrives on scene. This time segment is a function of distance, and the speed travelled.

Total Response Time: This time segment begins when the 911 call is answered and ends when the first apparatus capable of commencing the incident management arrives.

Resource Deployment 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 cause delays on scene. A well-trained crew can minimize these delays while providing a safe, successful response.

4.7.2 Utilizing NFPA 1720 Performance Standards

Recognizing that Composite and POC/volunteer fire departments serve a variety of community types with varying population densities and geography, NFPA developed response time and staffing standards relative to regional and individual demand zone conditions. NFPA 1720 response standards are lowered as population density decreases and travel distances increase within a demand zone increase. For example, the response goal for urban areas is to respond within nine minutes 90% of the time with 15 firefighters whereas the rural response standard is within 14 minutes 80% of the time with six firefighters. It is important to note that depending on the geography of a fire department's total response area and demand zone(s), levels of service may vary across demand zones for a fire department. Additionally, the response standards identified in NFPA 1720 are based on a structure fire of a single residence and are considered a leading practice and not a legislated requirement.

Table 32: NFPA 1720 Staffing and Response Time Standards

Demand Zone	Demographics	Minimum Staff to Respond[b]	Response Time (minutes)[c]	Meets Objective (%)
Urban area	>1000 people/2.6 km^2	15	9	90
Suburban area	500-1000 people/2.6 km^2	10	10	80
Rural area	<500 people/2.6 km^2	6	14	80
Remote area	Travel distance ≥ 12.87 km	4	Directly dependent on travel distance	90
Special risks	Determined by AHJ	Determined by AHJ based on risk	Determined by AHJ	90

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

The Parkland County has a population of 32,205 with an area of 2,375 km2. This translates to 13.6 people per km2 or 35.36 people/2.6km2 and falls into the rural area category of 1720. This category identifies the category for the majority of the municipality. There are sections of District 2 (Parkland Village) that should be identified as suburban area, and further there are sections of District 3, 4, and 6 that are beyond the identified 12.87 km radius and should be classified as remote areas. As these areas are not currently identified as such, this analysis will utilize and measure against the rural area calculation for the entire municipality.

The intent of the aggressive response goals in NFPA 1720 is to minimize total intervention time. Increased intervention time can have the following important impacts on a property owner/patient/victim:

- Decreased survivability
- Increased property loss in the event of fire
- Building design restrictions for response times beyond 10 minutes
- Potentially higher property insurance premiums based on extended response times and proximity to water supply.
- Longer-term economic impacts resulting from increased recovery time.

4.8 Emergency Response Performance Analysis

The following section provides a detailed analysis of all time segments affecting response time. Response time performance will be assessed against NFPA standards and fire department service-level response goals for emergency incidents within the County boundary. The NBC(AE) 2019 10-minute response initial response for structure fires will also be assessed. PCFS provides their own dispatching services for PCFS. The incident timestamps include:

- Alarm Processing Start Time
- Dispatch notification
- Apparatus responding
- Apparatus arrived
- Leaving scene
- Returned to station

Historically, fire departments typically reported their average (~50th percentile) performance. Average performance can be misleading as it is only achieved 50% of the time and depending on the distribution of data, may be different from a significant portion of the data. Contemporary fire and emergency services typically use the 90th percentile performance times to provide a more precise representation of response reliability. This information can be used for several purposes including, but not limited to:

- Monitoring response efficiency and effectiveness
- Reporting response performance to community and elected officials
- Evaluating the effectiveness and compliance with national and provincial codes
- Evaluating the effectiveness and compliance with Council policies and local bylaws
- Identifying possible improvement strategies
- Developing or modifying service level standards
- Planning for future resource needs (operational and capital)

Furthermore, only incidents involving a response by a fire/rescue apparatus should be analyzed and command vehicles are normally excluded in assessing the initial response performance of PCFS. This methodology is consistent in measuring response performance for NFPA 1720 and the National Building Code-2019 Alberta Edition, NBC(AE).

4.8.1 Alarm Handling Performance

Alarm handling time is the cumulative time taken for 911 call answering and alarm processing in the dispatching process. It is measured from the point at which the 911 call is answered to the notification of the fire department, in the case of PCFS, to the appropriate fire stations. NFPA 1710 states that alarm answering shall be completed within 15 seconds and alarm processing within 64 seconds, both 90% of the time for the highest priority events where significant property loss or imminent threat to life exists. Alarm handling performance is somewhat manageable by implementing best practice processes, supporting technologies and continuous improvement programs. This benchmark should be monitored with the aim of ensuring alarm handling is as efficient as possible to achieve optimal total response time performance. It should be noted that all incidents where the alarm processing was greater than 240 seconds (4-minutes) were excluded.

PCFS dispatch utilizes a pre-alert system that notifies firefighters prior to the end of the call taking. This pre-alert process is not captured in the alarm processing data and skews the over all processing analysis. The information identified below was unable to capture the pre-alert and demonstrates time the call was answered to the time the call processing was completed.

Table 33 provides an assessment of 90th percentile times taken for alarm handling for all incidents, all fires (including vehicle fires) and structure fires only. It should be noted that all incidents where the alarm processing was greater than 240 seconds (4-minutes) were excluded.

PCFS dispatch utilizes a pre-alert system that notifies firefighters prior to the end of the call taking. This pre-alert process is not captured in the alarm processing data and skews the over all processing analysis. The information identified below was unable to capture the pre-alert and demonstrates time the call was answered to the time the call processing was completed.

*Table 33: 90th Percentile Alarm Processing by Incident Type (in secs) **

Incident Type	2019	2020	2021	2022	2023	5- year
All Incidents	209	191	209	203	214	207
All Fires	222	221	216	218	213	216
Structure Fires	228	210	185	221	216	214

**Excluded Incidents where Alarm Processing was greater than 240 seconds*

The following key observations regarding alarm processing time were noted:

- Incidents of all fires s were processed at 216 seconds (3 minutes, 36 seconds) at the 90th percentile over a 5-year period. In the structure fire category, however, PCFS was slightly quicker at 214 seconds (3 minutes, 34 seconds) over the five-year period. These are both above the 64 second NFPA target at the 90th percentile.
- All incidents including fires, was lower at 207 seconds (3 minutes, 27 seconds) over a 5-year period.

Observation #15: PCFS alarm processing performance for emergency incidents exceeded the NFPA 1225 alarm handling standard of 64 seconds in all categories. Currently, the pre-alert times are not captured in the data presented. Time stamping for pre-alerts and truck statuses remains a manual entry process for the dispatchers, which can skew the data. The implementation of the new NG911 system will address and correct some of these processes.

Recommendation #15: Identify alarm handling process improvement opportunities and benchmarks.

Suggested completion: 12-24 months

Cost: Neutral

Resource: Staff time

Rationale: *Alarm processing is an important function. Gathering critical incident details, identifying the location of an incident, and providing pre-arrival instructions are included in this process. However, delays in alarm processing can contribute to increasing response time and intervention timelines.*

When these processes are extended, a root cause analysis should be undertaken with the aim of identifying process improvement opportunities. There are numerous potential causes of extended alarm handling including complex incidents, difficulty in identifying a location, and transfer of calls between agencies. Further, alarm processing times should be monitored and reported regularly.

4.8.2 Assembly Time Performance

Assembly time is calculated from the point of notification of an alarm to the point at which firefighters begin traveling to the incident. For PCFS firefighters, assembly time begins when paged and includes travel to the firehall as well as the time taken to dress in their personal protective equipment and safely seat themselves on the responding fire apparatus. NFPA 1720 does not include an assembly time standard.

Assembly time is influenced by several factors including time of incident, availability of firefighters, road conditions and distance to the fire station. As a result, it is difficult to assess whether assembly time performance can be improved given the range of factors influencing it. However, assembly time should be monitored to assess its impact on total response time and establishing achievable service levels.

Table 34 identifies times for the high-priority Fire incidents as well as medical incidents and all other incident types.

Table 34: 80th Percentile Assembly Performance by Incident Type (in secs)

Incident Type	2019	2020	2021	2022	2023	80th percentile 5-year average
Motor Vehicle	838	896	902	885	859	876
False Alarm	871	875	950	908	897	900
Fire	876	968	987	889	979	940
Hazardous Material	839	827	815	1177	811	894
Medical	867	897	846	1017	762	878
Other	949	819	873	804	839	857
Total	868	897	938	898	903	901

Table 35 identifies times by station. This can sometimes be helpful to identify where there may be differences between stations.

Table 35: 80th Percentile Assembly Performance by Station (in secs) (2019-2023)

Station	2019	2020	2021	2022	2023	80th percentile 5-year average
Acheson	869	887	913	830	817	863
Parkland Village	774	766	814	876	908	828
Wabamun	910	896	899	910	894	902
Tomahawk	964	1051	1155	1051	1087	1062
All Stations	868	897	938	898	903	901

The following key observations regarding assembly time were noted:

- *All stations in 2023 were taking 903 seconds (15 minutes, 3 seconds) at the 90th percentile to assemble at the station and respond to the incident.*
- *The Acheson station is below (817 seconds) all station assembly time in 2023 by 86 seconds (1 minute, 26 seconds). The PCFS dashboard indicates the median assembly time is dramatically lower during the weekdays than weekends and evenings (2023 152 seconds vs 559 seconds). This is indicative of the fulltime crews available at the Acheson Station during daytime hours.*
- *Tomahawk and Parkland Village Weekday vs Weekend/Evening median assembly time was relatively equal.*
- *The Wabamun station has a much lower weekday assembly time vs weekend/ evening. It should also be noted that the majority of incidents at the Wabamun station occurred during the weekend and evening hours*

Observation #16: The 90th percentile assembly times are significantly above the 80 second target and more than double for incidents across the 5-year period. PCFS needs to identify best practices and potential process efficiencies for assembly time enhancements that would benefit all stations.

Recommendation #16: Explore opportunities to improve, monitor and record assembly times, particularly for fire-related and other high priority incidents.

Suggested completion: 12 - 24 months

Cost: Neutral

Resource: Staff time

Rationale: *Assembly time performance can be affected by many factors including physical environment, configuration of the station, time of day, dispatch protocols and process differences between shifts. All these factors may impact assembly times performance across shifts. Through regular reporting and awareness, teams can understand how they compare to their peers and seek improvement.*

Furthermore, improvements in assembly time have a direct impact on the area included in the 10-minute response coverage target. See section 4.5 for more information on the National Building Code-2019 Alberta Edition, NBC(AE) and the impact of response time to development standards in a community.

4.8.3 Travel Time Performance

Travel time is the time taken to drive to the location of the incident. It is measured from the point at which the responding vehicle leaves the station until the point of arrival on scene. Travel time is a function of distance from the fire station to the incident and the speed travelled to the incident. It can be managed by distributing fire resources in optimal response locations within demand districts. Travel time should be monitored to assess the distribution and concentration of resources and assess whether additional resources are required in different locations to maintain service levels.

NFPA 1720 acknowledges the considerable variations in size and population densities of the demand zones of many POC/volunteer fire services. Depending upon the specific geography, the standard offers several different response time goals, but it does not identify a specific travel time standard.

Table 36 identifies the 80th percentile travel time for emergency incidents within Parkland County.

Table 36: 80th Percentile Travel Performance by Incident Type by Year (in secs)

Incident Type	2019	2020	2021	2022	2023	Total
Motor Vehicle	762	813	862	902	757	810
False Alarm	813	786	776	870	958	879
Fire	1068	976	1050	1099	1165	1088
Hazardous Material	739	814	880	715	471	821
Medical	858	764	799	1116	862	934
Other	897	267	1219	913	995	911
Total	877	864	971	1001	999	954

Table 37 identifies the 80th percentile travel time for emergency incidents within Parkland County by District.

Table 37: 80th Percentile Travel Performance by Incident Type by District (in secs) (2019-2023)

Incident Type	District						
	1	2	3	4	5	6	7*
All Other Requests for Fire Services	604	685	771	992	657	1182	727
Fire	786	824	1063	1302	919	1014	1191
Medical Co-Response	n/a	765	n/a	1042	756	1041	1131
All Incident Types	645	753	842	1099	741	1121	1132

***Note:** Area was split between District 4 and 6 in 2022.*

The following key observations regarding travel time were noted:

- *The 80th percentile travel times increased overall for the five-year period (877 seconds to 999 seconds).*
- *District 1 served by the Devon Station has the lowest travel time of 645 seconds (10 minutes, 45 seconds)*
- *District 6 (Tomahawk Station) had the highest travel time of 1121 seconds (18 minutes, 41 seconds)*

Observation #17: Although PCFS does not have a travel time objective, it is an important component of their overall response goal. There are remote areas within the County that are unable to be reached within the time frames set out in NFPA 1720.

Recommendation #17: Review and monitor travel time as a key contributor to overall effective response time and investigate options to reduce travel time particularly as the community grows.

Suggested completion: 12 - 24 months

Cost: Neutral

Resource: Staff time

Rationale: *Travel time is constrained by the starting location of the apparatus and the location of the emergency. Improving these times is not impossible but often requires investment in capital and deeper analytic modelling to identify optimal station placement which will minimize the travel distance to most emergencies.*

4.8.4 Response Time Performance

Total response time would typically be measured from the point at which the emergency call is answered in the 911-dispatching centre to the time the first fire or rescue apparatus arrives at the incident. This time best reflects the emergency system's overall response performance and the experience of the person requesting the service. For the purposes of measuring compliance with NFPA 1720 response standards, total response time is measured from the point of fire department notification to the point of the first arriving fire apparatus. The rationale for this approach is to acknowledge that most POC/volunteer fire departments contract dispatch services and are not in control of the time taken for alarm handling.

As the population, geographic footprint of developed areas and community risk increase, a fire department will experience an increase in concurrent requests for service, longer travel distances and a higher frequency of complex incidents. As a result, emergency response times will gradually increase as demand for service increases.

For PCFS, total response time is measured from the point at which the emergency call is answered in the 911 dispatching centre to the time the first fire or rescue apparatus capable of managing the incident arrives. This methodology is consistent with the National Building Code-2019 Alberta Edition, NBC(AE), which specifies that a 10-minute fire department response time is measured from the time the 911 call is answered to the time of the first arriving fire apparatus and firefighters capable of initiating fire mitigation.

Table 32 identifies the 80th percentile total emergency response time performance for all Parkland County stations. NFPA 1720 recognizes that the variation in suburban and rural response performance is greater than urban responses and therefore adopted an 80th percentile standard. The 80th percentile suburban response time standard is 600 seconds (10 minutes), and the rural response time standard is 840 seconds (14 minutes).

For PCFS, total response time is measured from the point at which the emergency call is answered in the 911 dispatching centre to the time the first fire or rescue apparatus capable of managing the incident arrives. This distinguishing factor is important as a command vehicle may be capable of managing a medical incident but not a fire incident. This methodology is consistent with the National Building Code-2019 Alberta Edition, NBC(AE), which specifies that a 10-minute fire department response time is measured from the time the 911 call is answered to the time of the first arriving fire apparatus and firefighters capable of initiating fire mitigation.

The NBC(AE) 2019 methodology was applied in calculating the 80th percentile response times for both the 10 &14minute compliance shown in Table 38: 80th Percentile Response Performance by Incident Type (in secs) (2019- 2023).

Table 38: 80th Percentile Response Performance by Incident Type (in secs) (2019- 2023)

Incident Type	2019	2020	2021	2022	2023	All Years
Vehicle Incident	1316	1362	1427	1327	**1227**	**1396**
False Alarms	1401	1289	1414	1519	**1270**	**1406**
Fire	1707	1818	1625	1739	**1705**	**1716**
Hazardous Material	1430	1628	1330	661	**1206**	**1417**
Medical	1452	1443	1173	1649	**1213**	**1584**
All Other Requests for Fire Services	1358	1478	1793	1472	**1507**	**1525**
80th percentile All Incident Types	1451	1464	1511	1499	1454	
600 sec compliance All Incident Types	15.9%	9.5%	7.9%	13.6%	15.3%	12.6%
600 sec compliance (Fires only)	11%	8.6%	5.5%	7.7%	7.9%	7.9%
600 sec compliance (All incident types except medicals)	15.9%	9.2%	7.8%	13%	14.8%	12.4%
840 Sec compliance All Incident Types	53.5%	51.8%	43.6%	46.4%	47.2%	48.5%
840 sec compliance (Fires only)	48.1%	45.3%	43.8%	40.8%	36.4%	42.8%
840 sec compliance (All incident types except medicals)	54.2%	51.9%	43.1%	48.2%	46.1%	48.7%

The following key observations regarding response time were noted:

- *The 80th percentile for fire events was 1716 seconds (28 minutes, 36 seconds) which does not met the NBC(AE) 2019 spatial separation threshold for a 600 second (10-minute) response time nor the NFPA 1720 standard of 14-minute response time at the 80th percentile for rural response.*
- *Compliance with the 600 sec (ten minute) response standard was relatively low at 7.9% for fire incidents.*
- *Compliance with the 840 sec (14 minute) response standard is less than 50% over the past 5-years. The compliance percentage has a decreasing trend over the past 5-years.*

The response performance for each station can be compared to show the combination of alarm processing, assembly, and travel time over the five-year period.

Table 39 80th Percentile Response Performance by Station provides a summary of the response performance.

Table 39: 80th Percentile Response Performance by Station (in secs) (2019-2023)

Station	2019	2020	2021	2022	2023	5-year 80th Percentile Avg
Acheson	1231	1213	1263	1175	1101	1197
Parkland Village	1271	1281	1233	1345	1309	1288
Wabamun	1461	1441	1609	1583	1398	1498
Tomahawk	1720	1455	1637	1915	1931	1732
80th percentile	1451	1464	1511	1499	1454	1476

The following key observations regarding response time segments were noted:

- *The Acheson Station has the quickest response time in 2023 of 1101 seconds (18 minutes, 21 seconds) at the 80th percentile. The PCFS dashboard indicates that the 2023 median response time was quicker during weekdays (536 seconds) vs weekend/ evening hours (932 seconds). This is indicative of full-time crews available during weekday daytime hours.*

Table 40 provides a summary of the performance by stations annually for fire only incidents.

Table 40: 80th Percentile Station Response Performance Fires Only by Year (in secs) (2019-2023)

Station	2019	2020	2021	2022	2023	5-year 80th Percentile Avg
Acheson	1260	1106	1164	1434	1418	1276
Parkland Village	1247	1217	1208	1353	1434	1292
Wabamun	1797	1545	1848	1768	1297	1651
Tomahawk	1671	1684	1610	1675	1774	1683
80th percentile	1707	1818	1625	1739	1705	1719

The following key observations regarding response time segments for fire only incidents were noted:

- *Acheson, Parkland Village, and Tomahawk Stations have increased response times over the 5-year period.*
- *Wabamun station saw a 500 second decrease in 2023 vs 2019 with an increase in fire incident in 2023.*
- *The 5 year 80th percentile average for all PCFS stations was 1719 seconds.*

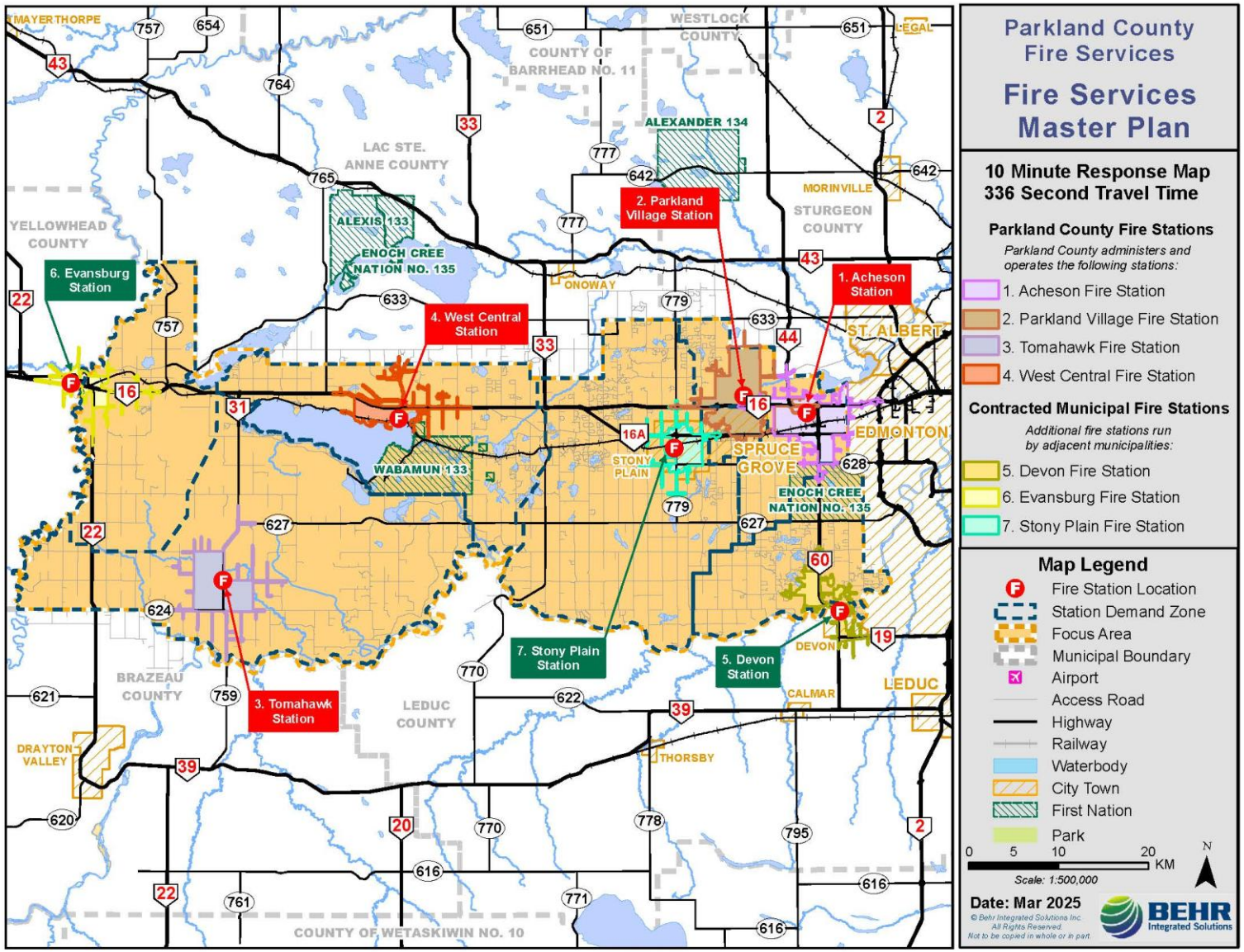
4.9 Response Time Performance Analysis

Due to the rural nature of the majority of the County, it is reasonable to delineate that the NBC(AE) 2019 regarding properties outside the 10-minute response area is not relevant due to the natural increased limiting distances between structures. In many areas of the county 10-minute travel time not capable to achieve as is greater than the travel distance from the respective fire stations. Utilizing the 840 second (14-minute) response time identified in the NFPA standard is a more reasonable and realistic performance level to measure.

Using NFPA 1720 as a guide, theoretical maps can be constructed to show the areas currently within the 10-minute NFPA standard for suburban response to fire incidents. NFPA uses an 80th percentile target for 10 firefighters to arrive on scene. Further maps can be constructed to show the areas currently within the 14-minute NFPA standard for rural response incidents and use an 80th percentile target for 6 firefighters arriving on scene. Using historical assembly time performance, we cannot generate theoretical travel times for each station where these 10-minute and 14-minute response is possible, 80% of the time.

The current alarm processing and assembly times combined are well over the 600 and 840 second standards. The following maps are used to show coverage areas with in the 600 sec, 840 sec, and 1200 sec response time. The response time utilizes a 64 second alarm processing time (identified as industry best practice, and a 300 second turnout time, allowing the travel time in seconds to be mapped appropriately.

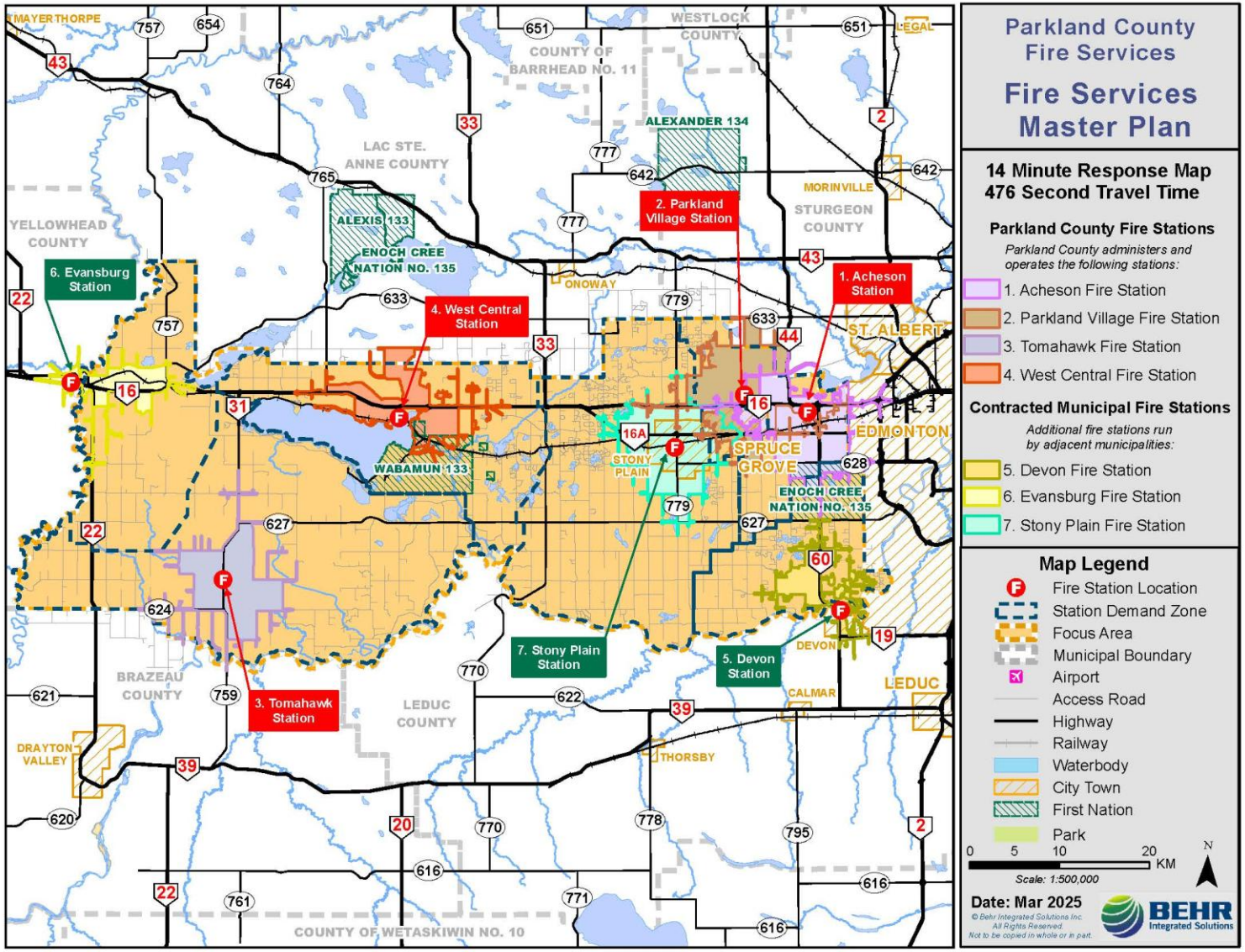
Map 5: Theoretical 10-Minute Total response time coverage (336 second travel time)



Observations of this response model include:

- *All stations would be limited to under 10km travel from the designated station*
- *Any new growth with any density should be subject to building code requirements for distance separations.*
- *outside the 10-min response time should be prepared to deal with defensive mode on any new residential construction considering the use of lightweight construction*
- *The Acheson business area has coverage within 10-min response time*

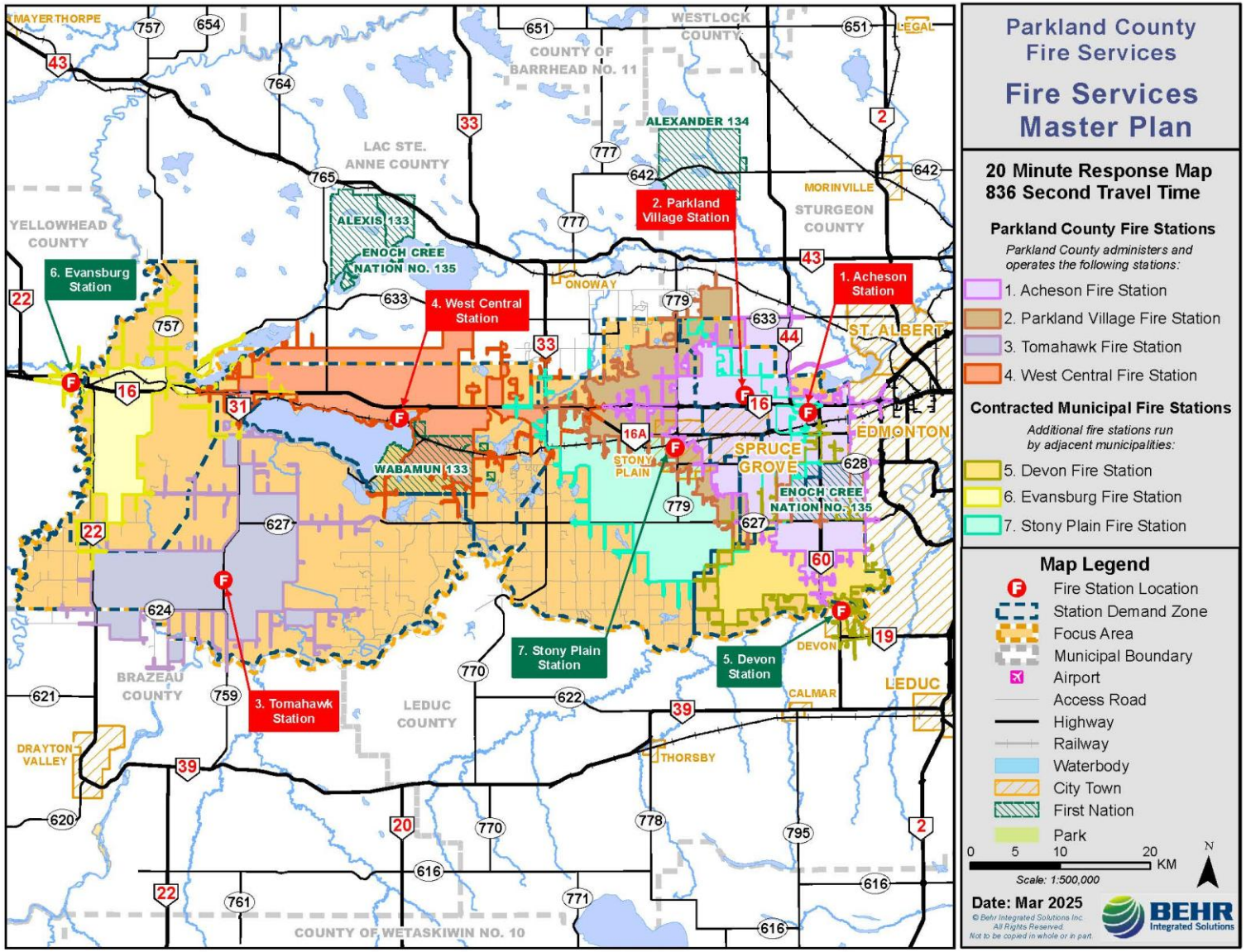
Map 6: Theoretical 14-Minute Total response time coverage (476 second travel time)



Observation of the 14-minute response time modelling

- *Response districts have increased to approximately 15 km travel distance from each station.*
- *With multiple stations responding, the distance may prevent having an effective response force on scene in an effective time, limited operations may occur until appropriate staffing levels are on scene.*
- *Parkland Village and Acheson area have effective coverage within the 14-minute response modelling.*
- *Devon Station and Stony Plain stations have effective coverage within the 15 km of their stations*

Map 7: Theoretical 20-Minute Total response time coverage (836 second travel time)



Observations of the 20-minute response modeling

- *There is effective overlap and the potential assembly of an effective response force in the east section of the county, where the higher percentage of incidents occur.*
- *The response overlap coverage in west side of the county does not indicate the assembly of an effective response force within the 20-min response time.*
- *Defensive operations must be considered where the effective response force is not assembled.*

4.10 Effective Response Force

The Parkland County Fire Service is a composite department, primarily utilizing paid-on-call firefighters, and using 3 fulltime firefighters per station during weekdays from the Acheson Fire Station and West Central Fire Station. NFPA 1720 recommends a minimum of 6 firefighters to respond within 14 minutes (Response time begins upon completion of the dispatch notification and the time ends on the arrive of the first 6 firefighters on scene). This is utilizing the rural area response districts as identified in the NFPA standard.

The ERF standards are established based on critical task analyzes completed by organizations such as NFPA and the National Institute of Standards and Technology (NIST). These standards are established to ensure adequate resources are available to complete critical tasks and safely manage incidents.

Table 41 shows the median staff on each incident grouping. This does not include resources from contracted services partners and reflects the number of PCFS staff assigned/available to each incident group.

Table 41: Median Staff Turnout by Incident Type Grouping

Incident Type	2019		2020		2021		2022		2023	
	WD	E/WE	WD	E/WE	WD	E/WE	WD	E/WE	WD	E/WE
Vehicle Incident	13	12	13	12	10	10	10	10	10	9
False Alarms	8	10	11	10	9	8	8	8	10	7
Fire	15	14	12	15	10	10	12	10.5	10	11
Hazardous Material	13	11	8	12	11	10	8	7	10	8.5
Medical	10	10	9	10	8	11	8	8	10	8.5
Other	11	10	8	10.5	9	11	9	7	11	8
All Incident Types	11	12	11	11	9	10	9	9	10	9

Weekdays	WD	Weekends	WE	Evenings	E

Table 42 identifies the median staff turnout by year by PCFS stations.

Table 42: Median Staff Turnout by PCFS station

Incident Type	2019		2020		2021		2022		2023	
	WD	E/WE	WD	E/WE	WD	E/WE	WD	E/WE	WD	E/WE
Acheson	6	6	7	7	4	5	7	6	7	5
Parkland Village	7	6	7	6	6	7	4	5	4	5
Wabamun	8	10	9	10	8	9	7	7	7	7
Tomahawk	4	6	4	5	3	4	5	6	5	6

Weekdays	WD	Weekends	WE	Evenings	E

Chart 7: Staff Turnout Distribution 600 seconds (All Incident Types) (2019-2023) across all incident types at 600 seconds, shows the total number of PCFS responders according to the Records Management System. Chart 8 indicates the Staff Turnout Distribution (All Incident Types (2019-2023) across all incident types at 840 seconds

Chart 7: Staff Turnout Distribution 600 seconds (All Incident Types) (2019-2023)

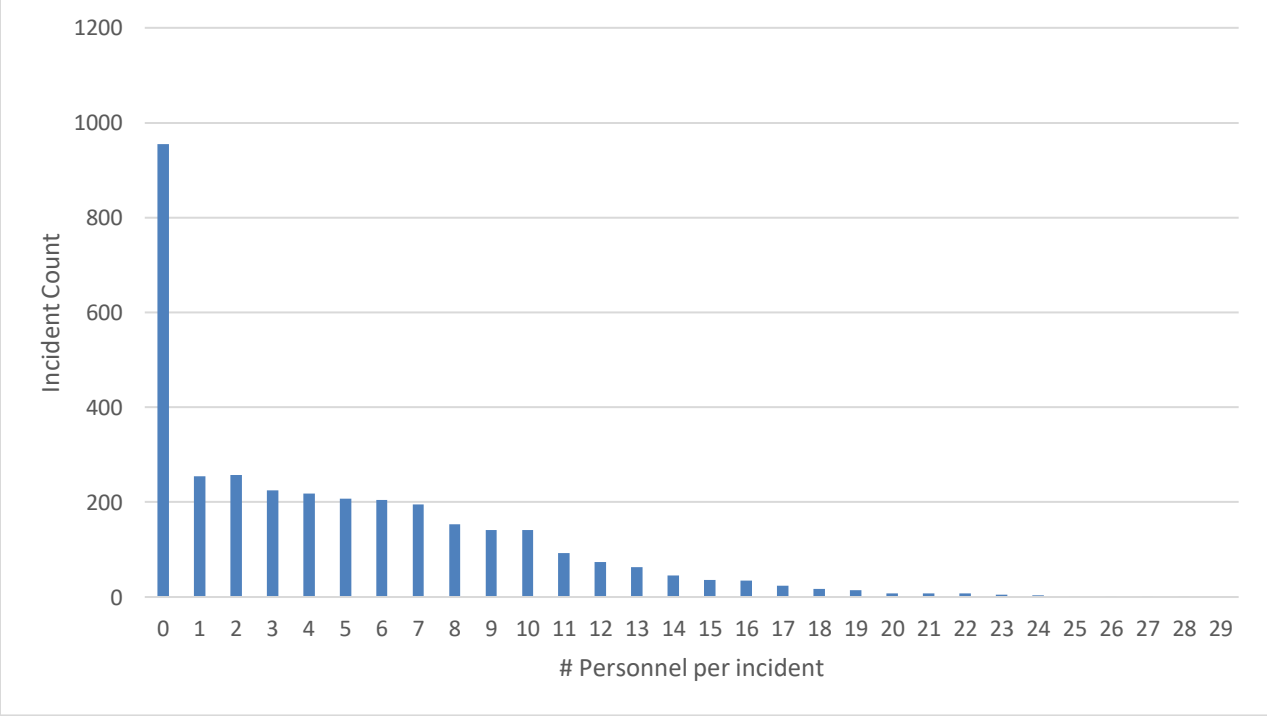


Chart 8: Staff Turnout Distribution 840 seconds (All Incident Types) (2019-2023)

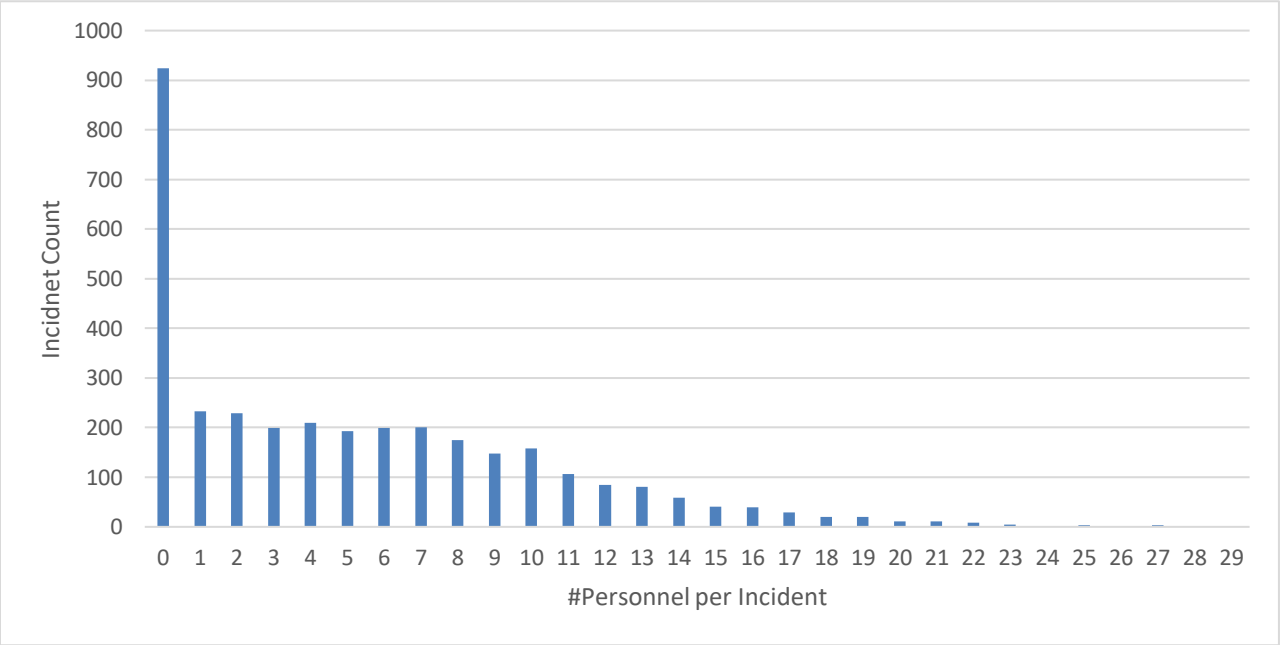


Chart 9: Staff Turnout Distribution 600 seconds (Structure Fire Incidents only) (2019-2023) for Structure Fire incidents at 600 seconds shows the total number of PCFS responders for those high-hazard events requiring a larger ERF. This shows the number of personnel on scene within 600 seconds (10-minutes). Chart 9: Staff Turnout Distribution 600 seconds (Structure Fire Incidents only) (2019-2023) for Structure Fire incidents at 840 seconds shows the total number of PCFS responders for those high-hazard events requiring a larger ERF. This shows the number of personnel on scene within 840 seconds (14-minutes)

Chart 9: Staff Turnout Distribution 600 seconds (Structure Fire Incidents only) (2019-2023)

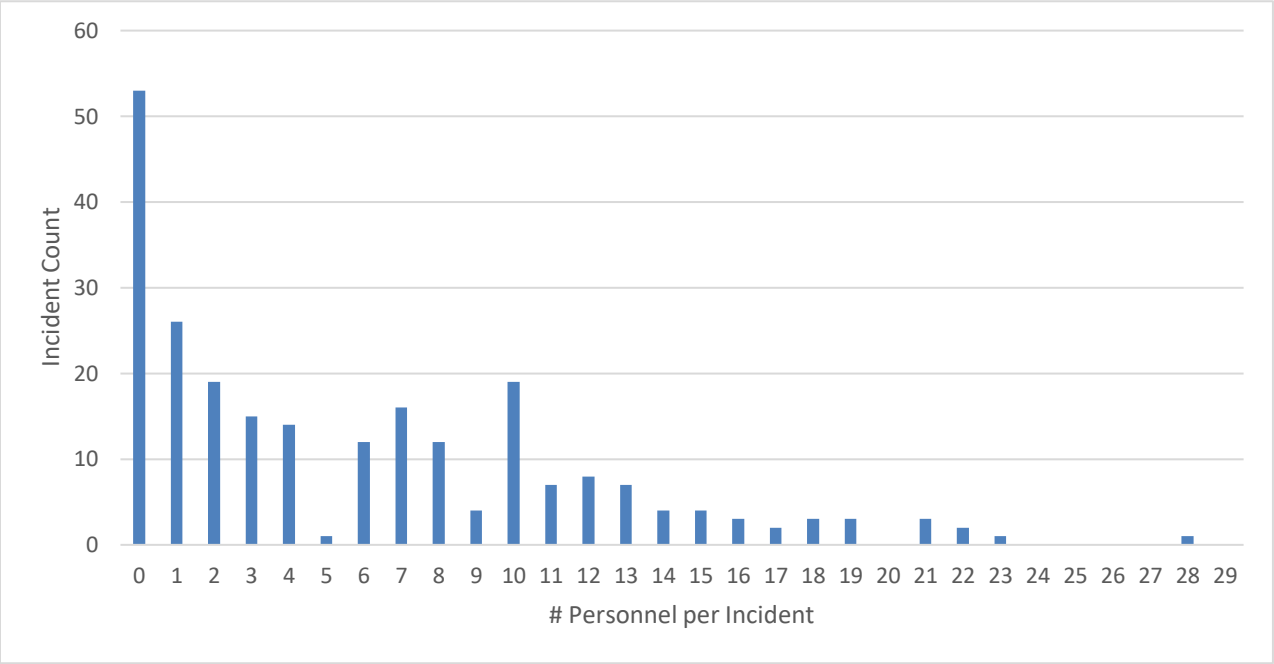


Chart 10: Staff Turnout Distribution 840 seconds (Structure Fire Incidents only) (2019-2023)

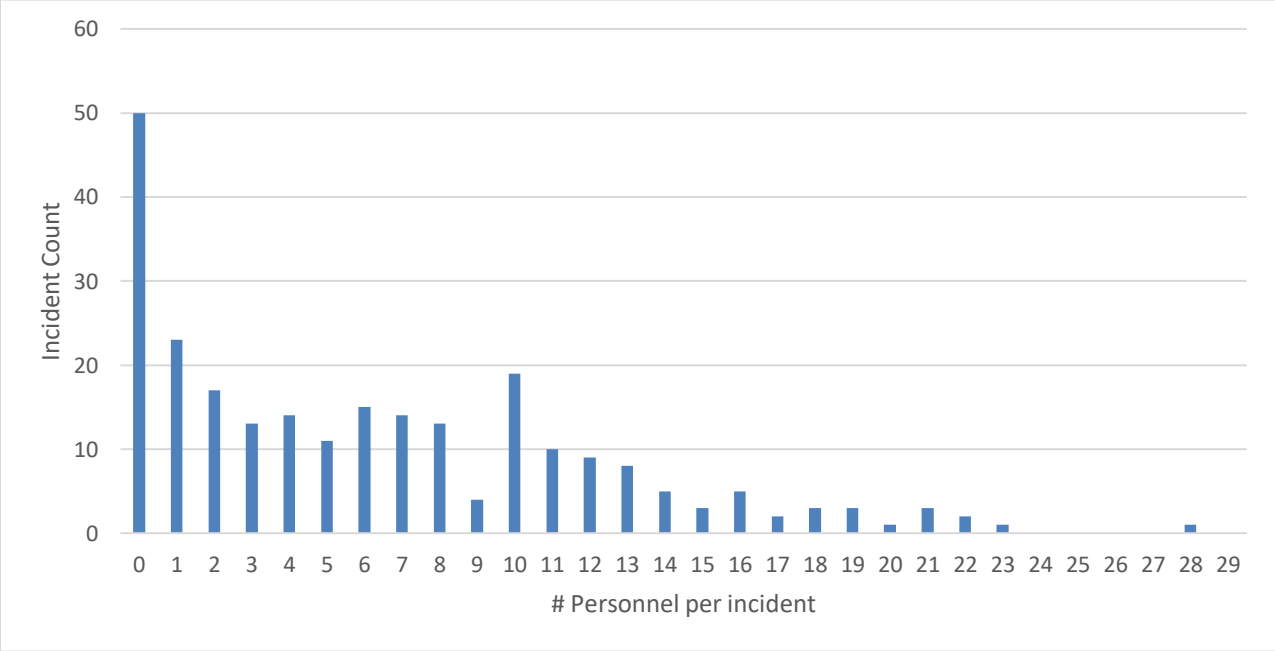


Table 43: 80th Percentile Response Performance by Incident Type (in secs) (2019- 2023) with Median Staffing

Incident Type	2019	2020	2021	2022	2023	All Years	Median Staffing
Vehicle Incident	1316	1362	1427	1327	1227	**1396**	**10**
False Alarms	1401	1289	1414	1519	1270	**1406**	**8**
Fire	1707	1818	1625	1739	1705	**1716**	**11**
Hazardous Material	1430	1628	1330	661	1206	**1417**	**9**
Medical	1452	1443	1173	1649	1213	**1584**	**9**
All Other Requests for Fire Services	1358	1478	1793	1472	1507	**1525**	**10**
NFPA 840 sec compliance	27.9%	48.7%	34.9%	36.8%	39.0%	**36.4%**	
NFPA 600 sec compliance	12.8%	21.2%	11.7%	9.8%	10.9%	**12.9%**	

The following key observations regarding the time taken to assemble an ERF at fires were noted:

- *PCFS was able to achieve 8-11 firefighters (median) on scene at all incidents over a 5-year period.*
- *PCFS only met having 6 firefighters on scene in 840 seconds (14-minutes) 36.4% of the time.*
- *PCFS met having 10 firefighters on scene in 600 seconds (10-minutes) only 12.9% of the time*

PCFS does not have a response performance objective established, however alarm processing, assembly time and the longer distances to travel to incidents, all have impacts on the total performance and meeting any of the NFPA standards.

Observation #18: The county can be divided into various response classifications identified within NFPA 1720 with Parkland Village qualifying as a suburban area, combined with the increased hazard risks identified in the Acheson Business Park, the need for improved response performance is required. Currently the response performance in District 2 (served by Parkland Village station and the Acheson station) is Acheson Station 1197 seconds, Parkland Village 1288 seconds, well over a 20-minute total response time for all incidents. For fires the total response increases to over 21 minutes.

Further the number of POC firefighters responding to incidents has been declining across the County. The median number of firefighters responding in the district 2 area is, weekdays Acheson station 7, Parkland Village station 4, and on weekends and evenings the number drops to 5 ff at both stations.

Recommendation #18: Through a phased in approach, transition the Acheson Station to a 24/7 full-time crew with full implementation in 5-years (20 firefighters).

Suggested completion: 12 -60 months

Cost: The cost per firefighter is $83,300-$104,200 plus benefits. Phased in over 4 years. 4 new FTE firefighters annually will cost between $333,200-$416,800 plus benefits.

Resource: Operating budget, human resources

Rationale: *The addition of full-time staffing phased in over a 4-year period will allow for a full-time crew to respond faster and begin to conduct fire suppression or incident mitigation quicker. This crew would be backed up by a paid-on-call staffing base and additional fire stations as required. The Parkland Village and Acheson Industrial area represent the highest call volume, and a higher perceived risk as identified in the CRA. The full-time crew would also be available to respond to non-emergency and lower risk incidents reducing the callout impacts on the POC firefighters.*

The full-time crew also presents opportunity to assist with other sections such as public education, and code enforcement inspections. During both daytime and evening hours, reducing the need for additional overtime.

4.11 Critical Task Analysis

The purpose of completing a critical task analysis is to consider whether PCFS response SOGs reflect the number of firefighters required to safely manage common risks. In other words, are enough firefighters typically responding to complete the critical tasks on an emergency scene in a safe and timely manner? The OHS guide for firefighting states that fire department policy should include "the minimum number of firefighters required to safely perform each identified firefighting function or evolution."

Considerable research was undertaken by the NIST to identify the optimum number of four firefighters in a fire company necessary for the most effective completion of the over 22 essential critical fire ground tasks at a typical single-family house fire. NFPA recommends a response of 16 firefighters for a standard single-house residential structure fire. Four fire companies of four firefighters per apparatus are required for a full alarm assignment (17 if an aerial device is used).

PCFS has an initial response of two stations for a structure fire. Any additional resources, either firefighters or apparatus, requires activation of additional stations, or mutual/ automatic aid. With the median number of fire fighters on scene generally falling below the recommended industry best practice for fire operations, PCFS must look to address what critical tasks can be accomplished by the number of firefighters on scene so to protect the health and safety of firefighters and provide the best possible service to the public.

Table 44: Low Risk: Small Fire (No Exposures): Garbage, Vehicle – Private, Grass, Investigate (External), Monitoring Alarm (W/O Confirmation), Medical.

Low Risk Incident	
Command and Safety	1
Driver/ Pump Operator	1
Incident responders	2
Total Personnel	4

Table 45: Moderate Risk: Attached Garage, Single Family Residential (Detached/Duplex)

Moderate Risk Incident	
Command	1
Safety	1
Pump Operator	1
attack line/ search and rescue	6
Water supply	1
Rapid Intervention Crew	3
Ventilation/ Utilities	2
EMS	2
Total Personnel	17

Table 46: Moderate Risk: Motor Vehicle Crash (1-3 Private Vehicles)

MVC	
Command and Safety	1
Driver/ Pump Operator	1
Incident responders	5
Blocker vehicle driver	1
Total Personnel	8

Table 47: Moderate Risk: Technical Rescue

Technical Rescue	
Command	1
Safety	1
Rescue Sector Officer	1
Rescue specialists	7
support	3
EMS	2
Total Personnel	15

Table 48: High Risk: Commercial, Seniors' Home, Industrial, Strip Mall, Mid-Rise Residential

High Risk Incident	
Command	1
Safety	1
Pump Operator	1
Initial Attack Line	2
Back up line	2
Search and rescue	4
Water supply	1
Rapid Intervention Crew	4
Suppression Support	6
EMS	2
Ventilation/ Utilities	4
Total Personnel	28

Observation #18: A critical task analysis is embedded in the standards of response coverage. This analysis establishes the effective response force for the core services, including resource requirements and tactical priorities. Critical tasking is important to understand what staffing is needed to mitigate the identified risks and to determine what the fire department can manage with the resources PCFS currently has available.

Recommendation #18: Complete a critical task analysis as part of the standards of cover response policy.

Suggested completion: 24-36 months

Cost: Neutral

Resource: Staff time

Rationale: *Critical task analyses should be used to identify operational limitations in policy to clarify incident command objectives and maintain safe operations. As described above, low to medium incidents will often require more than 10 firefighters to complete concurrent critical tasks safely and minimize intervention time. The most common number of initial responders for PCFS in 2023 for fire incidents is 4-7 per station (see Section 4.10). As a result, critical task analysis will identify incident types where tactical firefighting objectives may require modification and immediate call back or contracted services requests can be automated.*

Further the Alberta OHS guide for firefighting stipulates that response policies should include a critical task analysis. It states, "Guidelines and policies developed should include, as per National Fire Protection Association (NFPA) standards:

a) *Identification of the standard firefighting functions based on the emergency services to be offered, including functions that must be performed simultaneously.*

b) *The minimum number of firefighters required to safely perform each identified firefighting function or evolution."*

c) *The PCFS must ensure compliance with the OHS regulations*

4.12 Performance Management

Performance measurement is at the core of moving toward a data-based culture and away from the inclusion of opinions within fire services. Performance measurement allows fire services to:

- Determine a baseline performance level according to indicators
- Establish goals based on current performance
- Determine the gap between desired goals and current performance levels
- Track progress toward achieving goals
- Benchmark and compare performance between departments
- Identify problems and causes
- Plan for the future

Performance data must be relevant, timely and useful to drive performance improvement through performance management. Performance management refers to the process of monitoring and identifying service excellence and service gaps. In this context, it is not intended as an individual performance review.

Measurable service levels and objectives, as well processes to access timely data must be in place to support performance measurement, management, and reporting. County Council is the authority having jurisdiction over establishing service levels. Senior administration and the fire chief should provide County Councillors with relevant performance reports reflecting the fire service performance information to support this process. However, several factors beyond performance information contribute to how appropriate service levels are established including assessment of local risks, cost, and general economic conditions.

Operational performance data and service level expectations should be regularly reported to staff. Timely performance reporting reflecting operational performance metrics and service levels is key to implementing performance management and system improvements. One approach to providing timely information to fire staff is to develop a performance dashboard. Computer-aided dispatch (CAD) and record management system (RMS) technologies must be integrated to support this tool.

Dashboards should be developed with a specific audience in mind. Information provided to governance (municipal Council) can address relevant response standards, budget performance, incident type and frequency, and specific areas of increased pressures.

Fire department leadership are also interested in similar metrics with increased detail on response performance, category of service calls and trends provide the data necessary to complete evaluations and service level adjustments or changes. It should also include breakdowns by each platoon and each station to identify any differences that are impacting operational effectiveness. Dashboards geared to front-line staff should provide them with timely feedback on their teams' performance and how they compare across the system.

PCFS has an extensive PowerBI dashboard that is integrated into their RMS allowing for the breakdown of various performance indicators overall for the county and for each specific station and district.

Table 49: Sample KPIs by Dashboard Audience

KPI	Governance	Leadership	Front-line
Incident Type and Volume	Yes	Yes	Yes
Response Time Performance	Yes	Yes, with detail	Yes, with detail
Budget Performance	Yes	Yes	No
Fire-Related Injuries and Fatalities	Yes	Yes	No
Property Loss Due to Fire Estimate	Yes	Yes	No
Alarm Handling	No	Yes	No
Assembly Time (NFPA 1710)	No	Yes	Yes
Travel Time (NFPA 1710)	No	Yes	Yes
National Building Code-2019 Alberta Edition, NBC(AE) Benchmark	No	Yes	No
ERF Staffing Targets	No	Yes	No
Fire Prevention Activities	Yes	Yes	No
Operational Apparatus	No	Yes	Yes
Safety Alerts or Important Messaging	No	No	Yes
Overtime Usage	No	Yes	No

APPENDICES

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 POC/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 Coordination 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.
Contracted services 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 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, Charts, Maps, Images and Tables

Figures

Charts

Maps

Images

Tables

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 contracted services 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

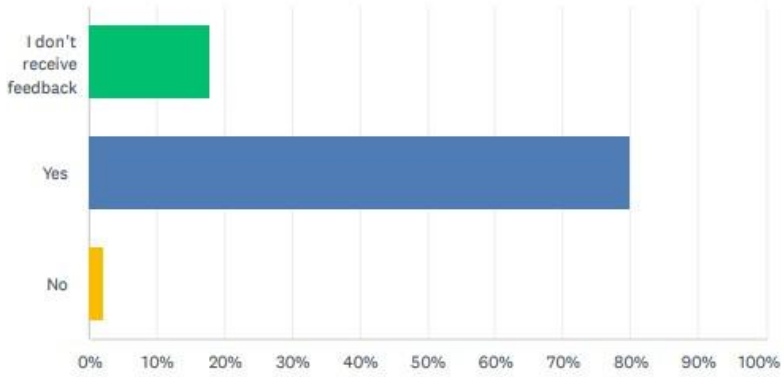
B. Response Time
i. Customized response based on Emergency Services Input
ii. Response time includes 80% of all calls for service
iii. Total drive time along roads (determined above by road speeds)
iv. Variances are identified and are tweaked based on known data or other trends

C. Response Polygons
i. Identify general area of response from the outer most limits driven
ii. Also identify response zones for contracted services
iii. Identify gaps in response
iv. Aid in the development of Fire Zones for response
v. Assist in the identification of new stations
vi. Also identifies needs to move stations to another location, as required

Appendix D: Online Firefighter Survey Results

Q1 Do you receive positive feedback from the citizens of the community about the services you provide? Yes or no, if no please provide additional comments

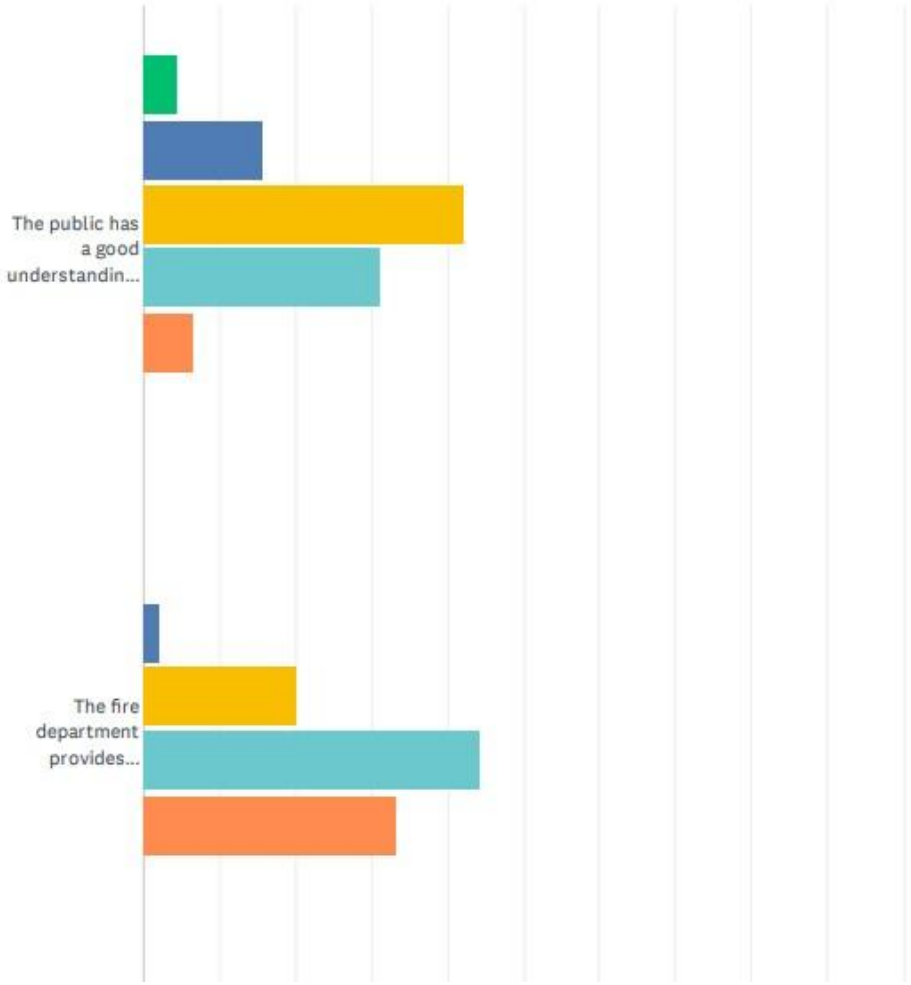
Answered: 45 Skipped: 0



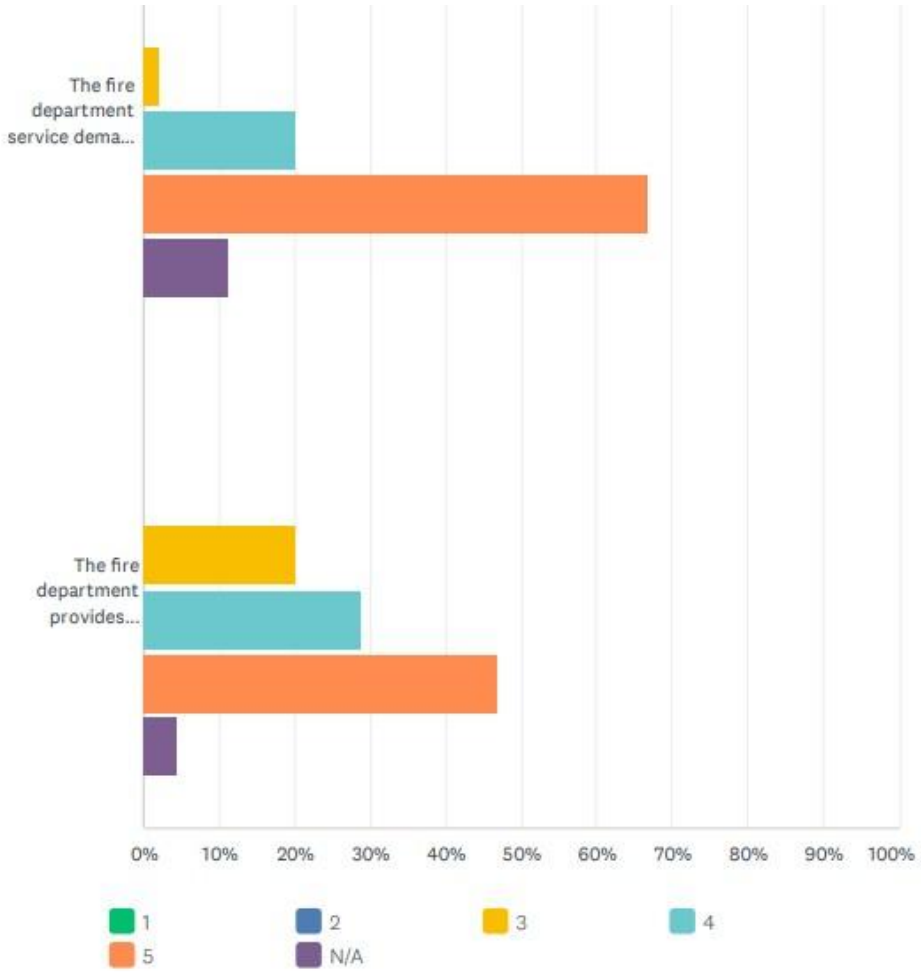
ANSWER CHOICES	RESPONSES	
I don't receive feedback	17.78%	8
Yes	80.00%	36
No	2.22%	1
TOTAL		45

Q2 Please rank the following statements in order of how strongly you agree, with 5 being the strongest and 1 being the weakest:

Answered: 45 Skipped: 0



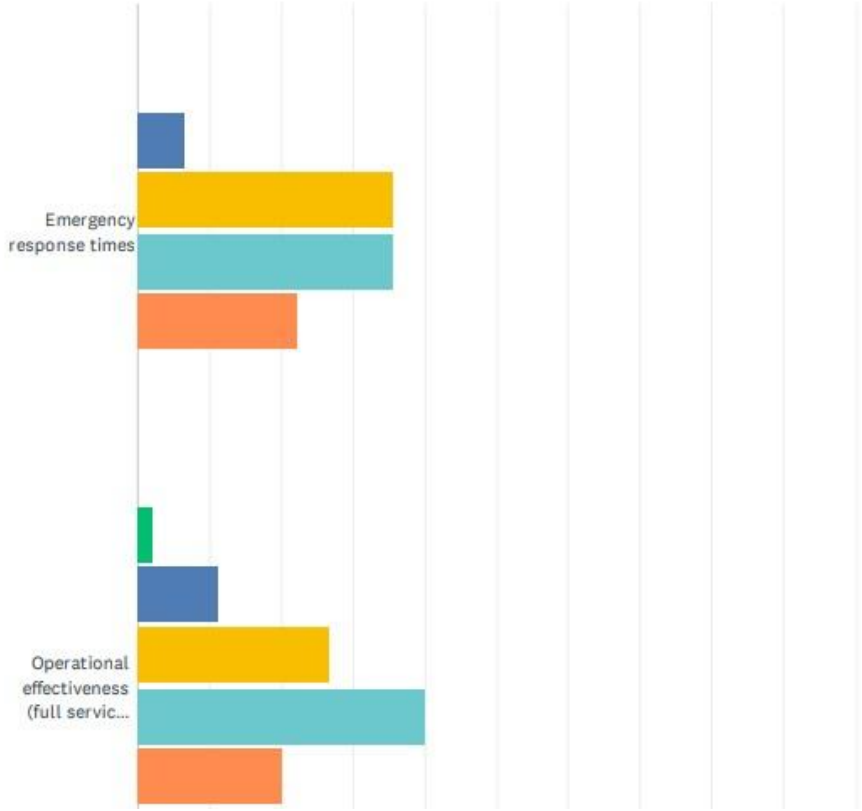
Q2 Continued



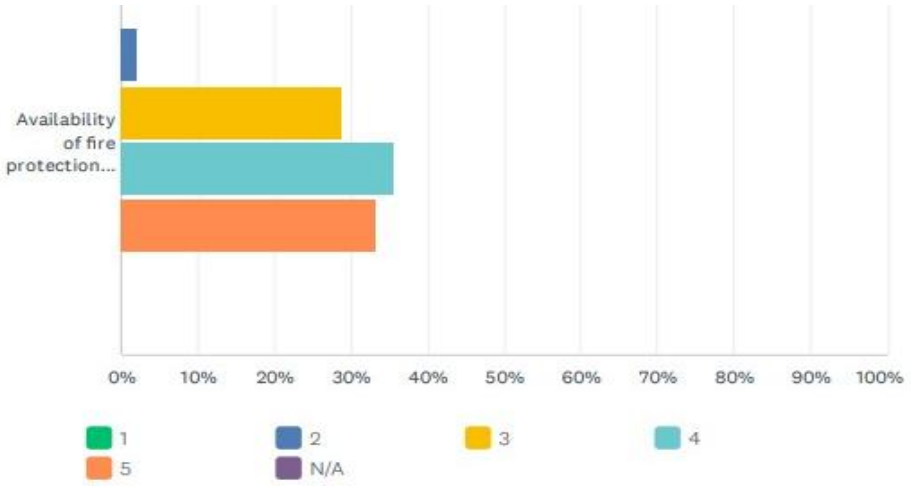
	1	2	3	4	5	N/A	TOTAL	WEIGHTED AVERAGE
The public has a good understanding of the fire service and its capabilities.	4.44% 2	15.56% 7	42.22% 19	31.11% 14	6.67% 3	0.00% 0	45	3.20
The fire department provides adequate fire/rescue protection	0.00% 0	2.22% 1	20.00% 9	44.44% 20	33.33% 15	0.00% 0	45	4.09
The fire department service demands will increase in the future due to community and economic growth	0.00% 0	0.00% 0	2.22% 1	20.00% 9	66.67% 30	11.11% 5	45	4.72
The fire department provides adequate alternate fire risk reduction strategies (e.g., residential sprinklers, FireSmart program, public education, and fire prevention programs)	0.00% 0	0.00% 0	20.00% 9	28.89% 13	46.67% 21	4.44% 2	45	4.28

Q3 Please rank the following aspects of fire/rescue protection that your department provides, with 5 being the most adequate and 1 being the least adequate:

Answered: 45 Skipped: 0



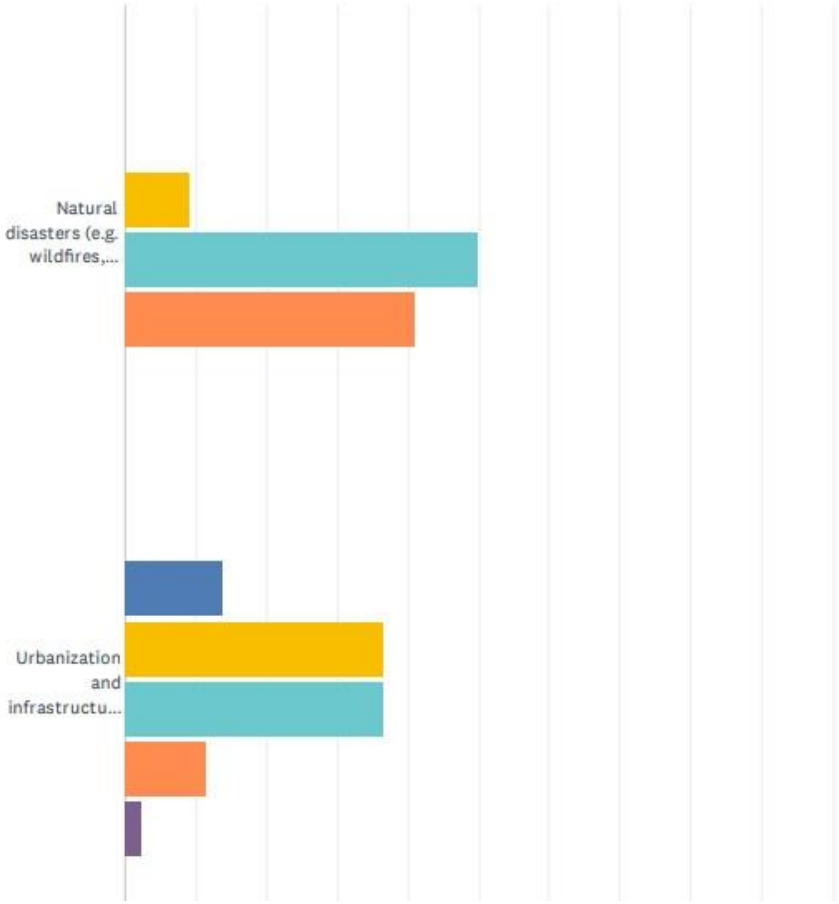
Q3 Continued.



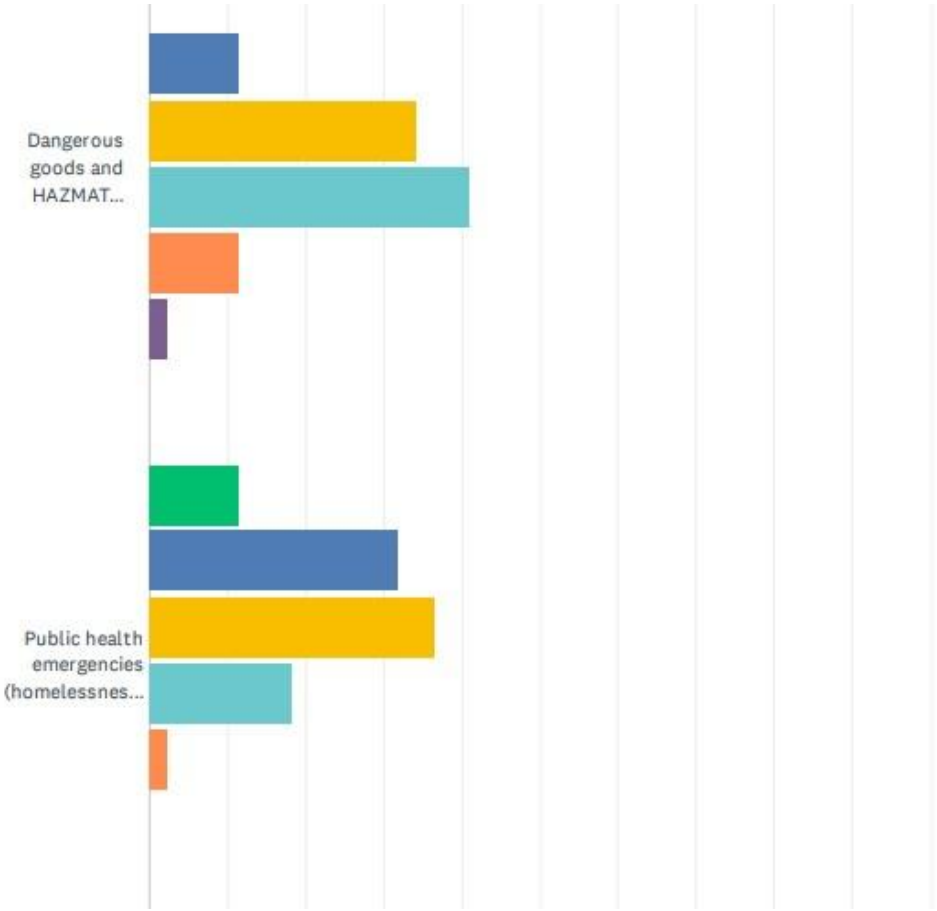
	1	2	3	4	5	N/A	TOTAL	WEIGHTED AVERAGE
Emergency response times	0.00% 0	6.67% 3	35.56% 16	35.56% 16	22.22% 10	0.00% 0	45	3.73
Operational effectiveness (full service response capabilities and capacity)	2.22% 1	11.11% 5	26.67% 12	40.00% 18	20.00% 9	0.00% 0	45	3.64
Availability of fire protection resources (fleet, equipment, staffing, facilities)	0.00% 0	2.22% 1	28.89% 13	35.56% 16	33.33% 15	0.00% 0	45	4.00

Q4 Please rank the following risks in order of significance, with 5 being the highest risk and 1 being the lowest risk.

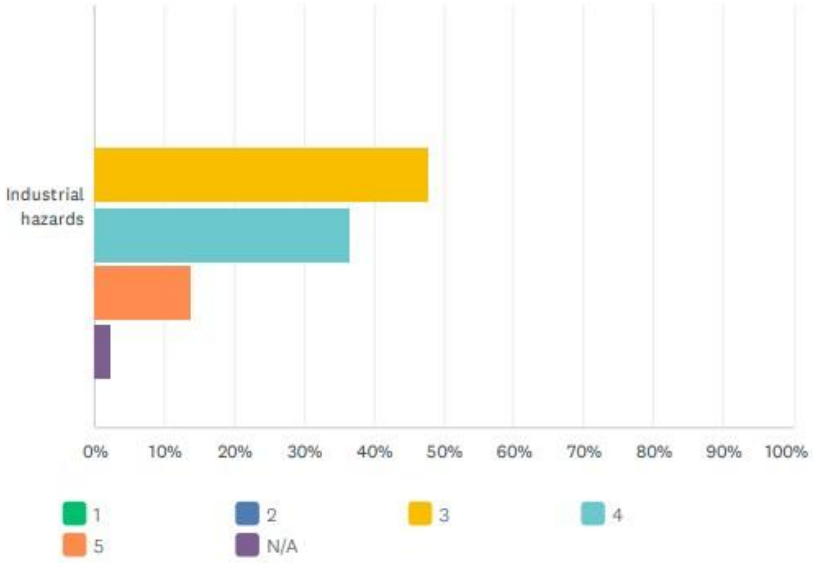
Answered: 44 Skipped: 1



Q4 Continued.



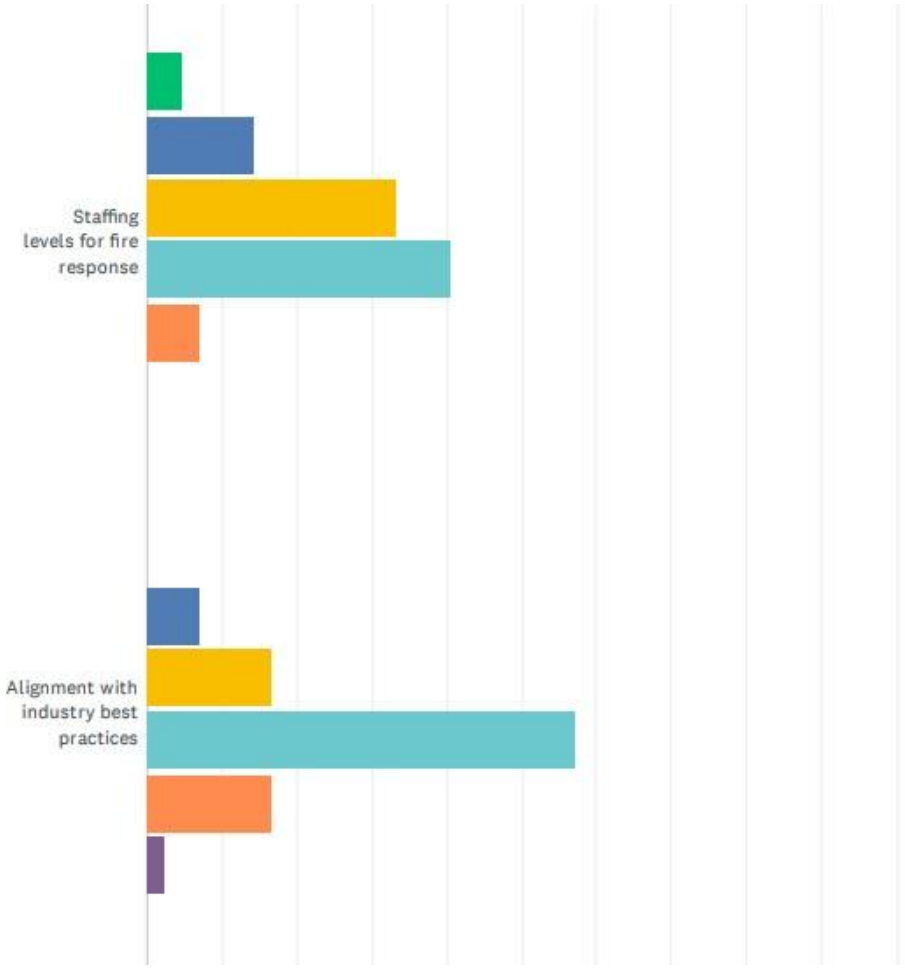
Q4 Continued.



	1	2	3	4	5	N/A	TOTAL	WEIGHTED AVERAGE
Natural disasters (e.g. wildfires, flooding, climate change)	0.00% 0	0.00% 0	9.09% 4	50.00% 22	40.91% 18	0.00% 0	44	4.32
Urbanization and infrastructure development	0.00% 0	13.64% 6	36.36% 16	36.36% 16	11.36% 5	2.27% 1	44	3.47
Dangerous goods and HAZMAT Incidents	0.00% 0	11.36% 5	34.09% 15	40.91% 18	11.36% 5	2.27% 1	44	3.53
Public health emergencies (homelessness, drug crisis, pandemic)	11.36% 5	31.82% 14	36.36% 16	18.18% 8	2.27% 1	0.00% 0	44	2.68
Industrial hazards	0.00% 0	0.00% 0	47.73% 21	36.36% 16	13.64% 6	2.27% 1	44	3.65

Q5 Please rank the following aspects of your fire service's response model, with 5 being the most adequate and 1 being the least adequate. Provide additional comments if needed:

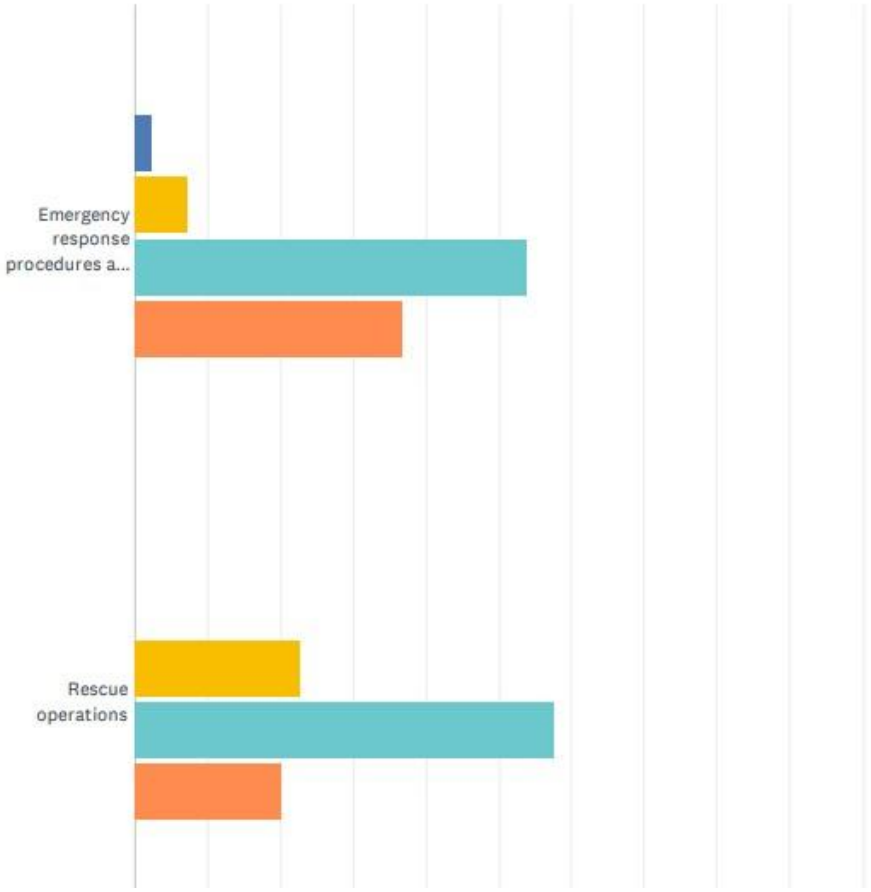
Answered: 42 Skipped: 3



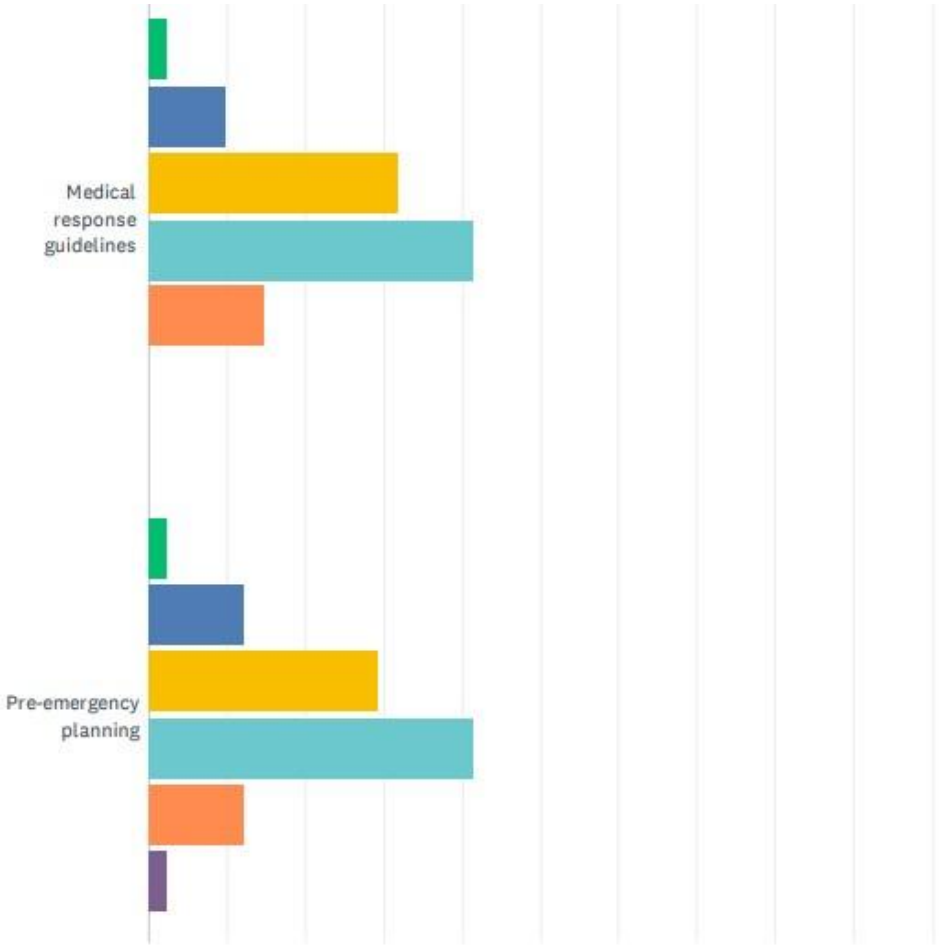
	1	2	3	4	5	N/A	TOTAL	WEIGHTED AVERAGE
Staffing levels for fire response	4.76% 2	14.29% 6	33.33% 14	40.48% 17	7.14% 3	0.00% 0	42	3.31
Alignment with industry best practices	0.00% 0	7.14% 3	16.67% 7	57.14% 24	16.67% 7	2.38% 1	42	3.85
Capacity to handle medical responses	0.00% 0	21.43% 9	33.33% 14	38.10% 16	7.14% 3	0.00% 0	42	3.31
Rate of staff turnover	2.44% 1	4.88% 2	41.46% 17	39.02% 16	9.76% 4	2.44% 1	41	3.50

Q6 Please rank the following policy/procedure/guidelines with respect to effectiveness and efficiency, with 5 being very effective and 1 being the least effective:

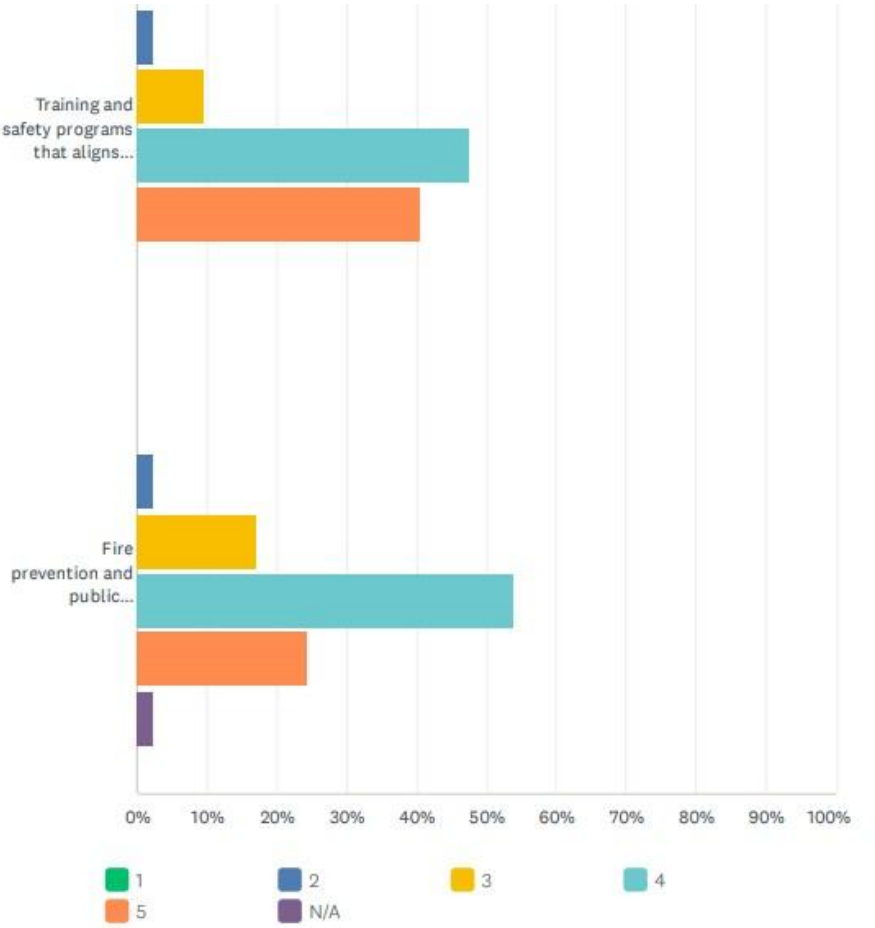
Answered: 42 Skipped: 3



Q 6 Continued.



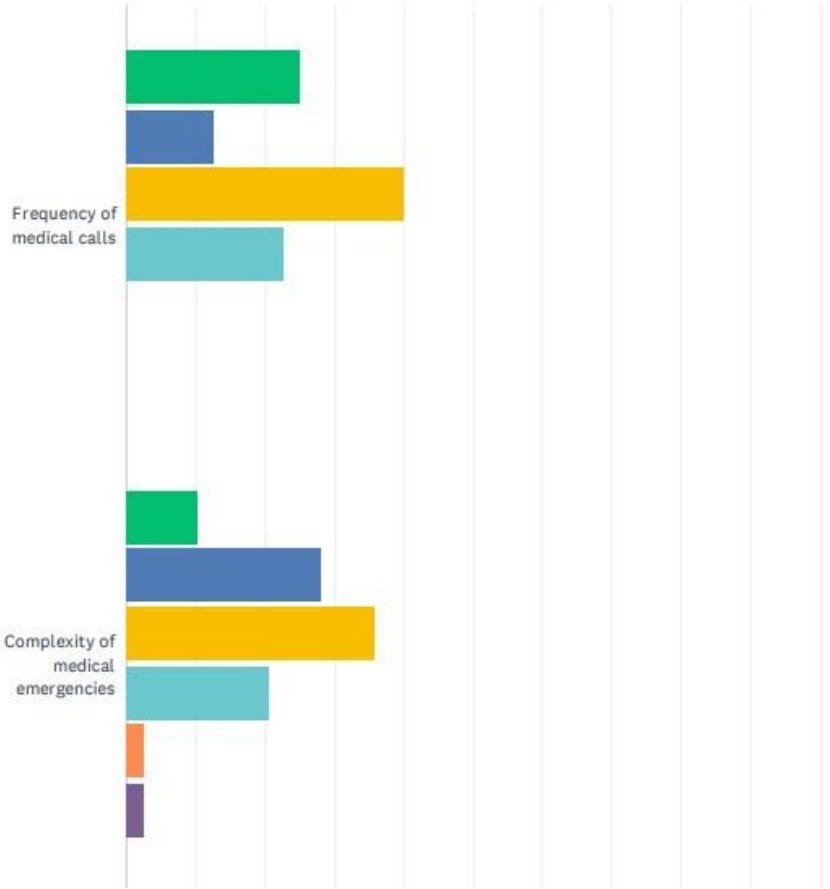
Q6 Continued.



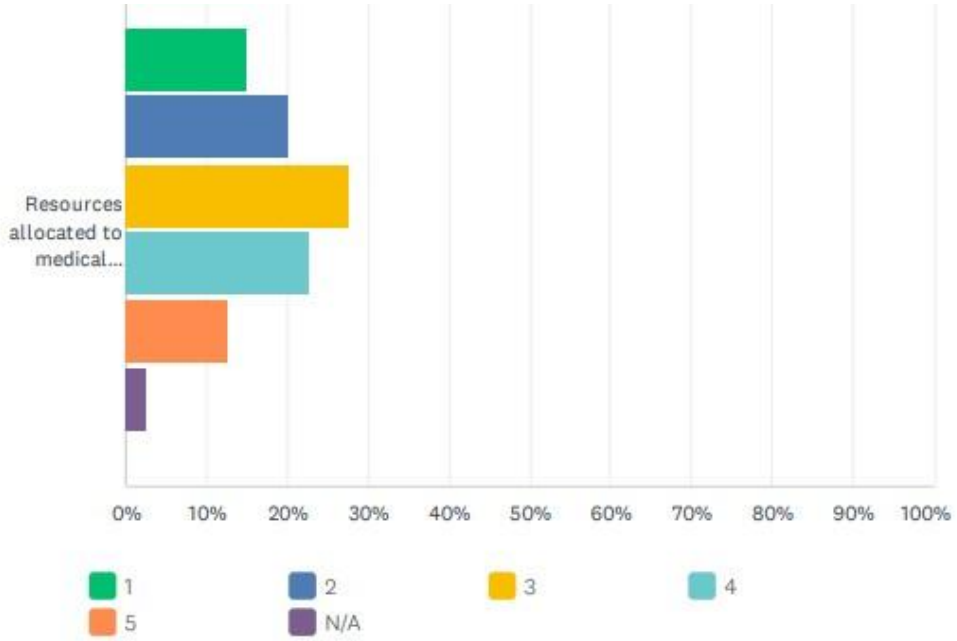
	1	2	3	4	5	N/A	TOTAL	WEIGHTED AVERAGE
Emergency response procedures and guidelines	0.00% 0	2.44% 1	7.32% 3	53.66% 22	36.59% 15	0.00% 0	41	4.24
Rescue operations	0.00% 0	0.00% 0	22.50% 9	57.50% 23	20.00% 8	0.00% 0	40	3.98
Medical response guidelines	2.44% 1	9.76% 4	31.71% 13	41.46% 17	14.63% 6	0.00% 0	41	3.56
Pre-emergency planning	2.44% 1	12.20% 5	29.27% 12	41.46% 17	12.20% 5	2.44% 1	41	3.50
Training and safety programs that aligns with core services	0.00% 0	2.38% 1	9.52% 4	47.62% 20	40.48% 17	0.00% 0	42	4.26
Fire prevention and public education programs	0.00% 0	2.44% 1	17.07% 7	53.66% 22	24.39% 10	2.44% 1	41	4.03

Q7 Please rank the following aspects of medical response in terms of how much they impact your capacity to provide other emergency response services, with 5 being the highest impact and 1 being the lowest impact:

Answered: 40 Skipped: 5



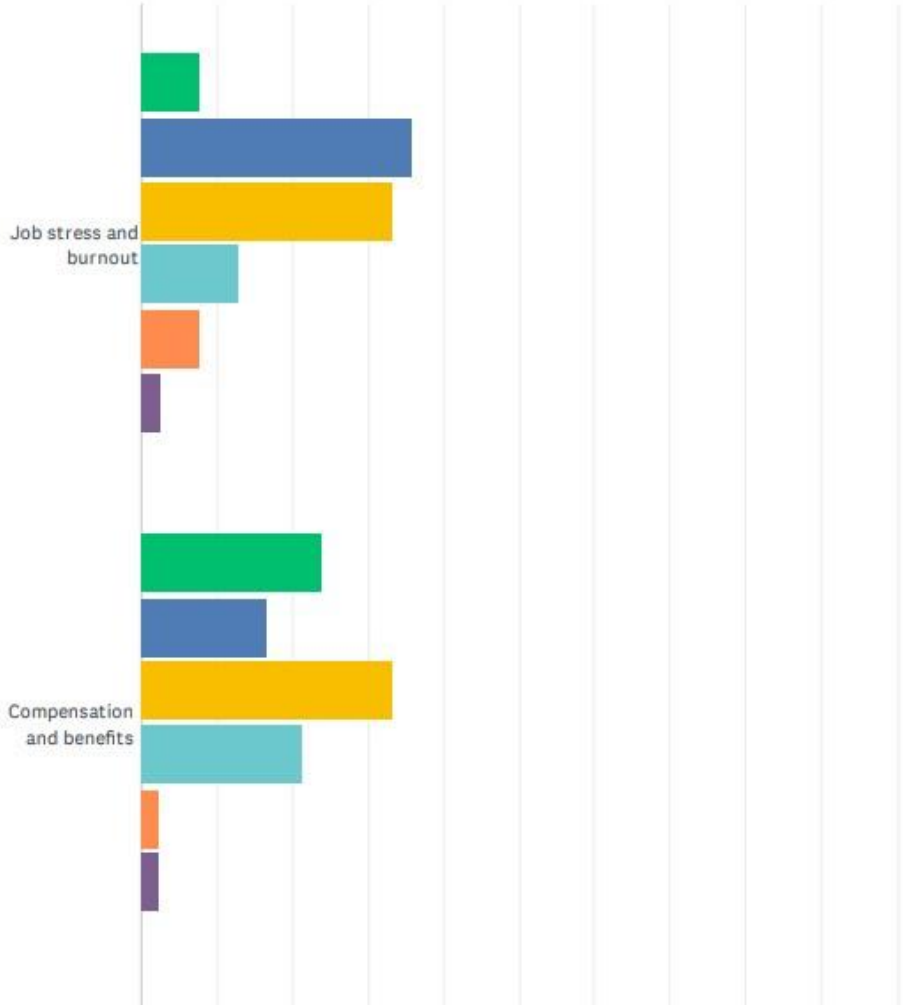
Q7 Continued.



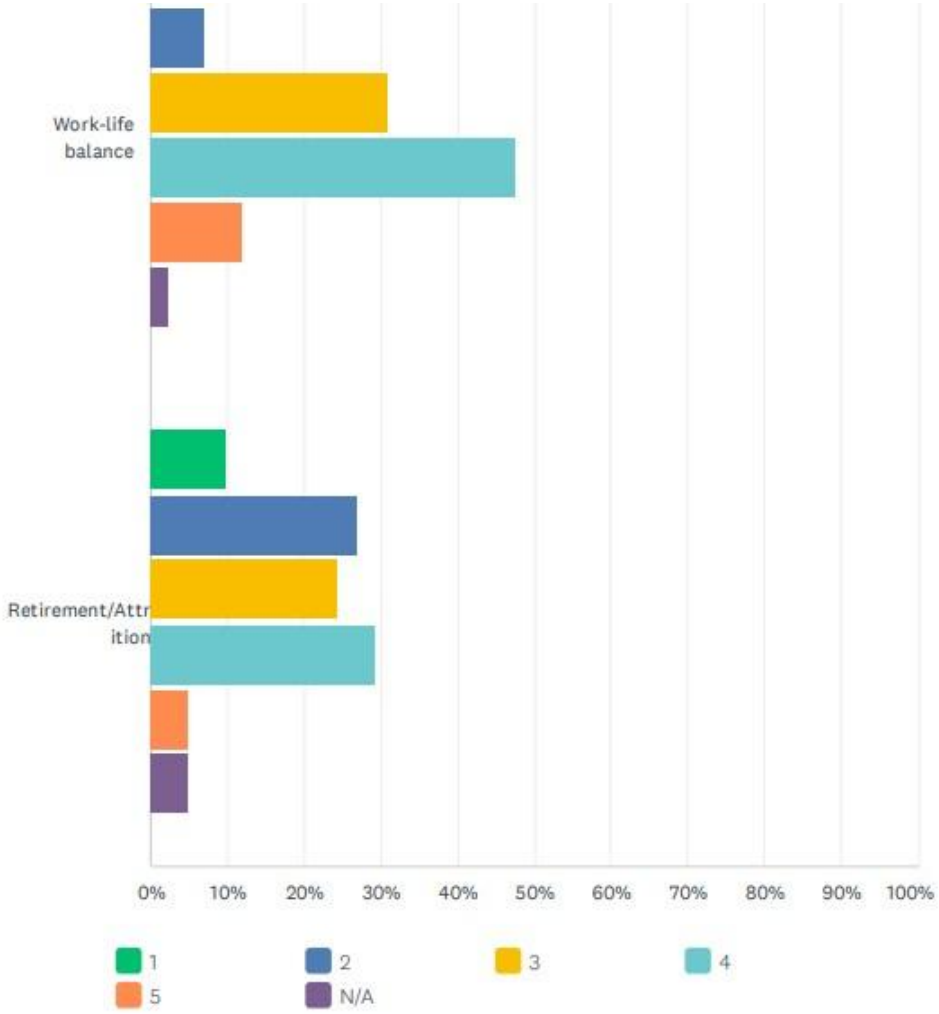
	1	2	3	4	5	N/A	TOTAL	WEIGHTED AVERAGE
Frequency of medical calls	25.00% 10	12.50% 5	40.00% 16	22.50% 9	0.00% 0	0.00% 0	40	2.60
Complexity of medical emergencies	10.26% 4	28.21% 11	35.90% 14	20.51% 8	2.56% 1	2.56% 1	39	2.76
Resources allocated to medical response	15.00% 6	20.00% 8	27.50% 11	22.50% 9	12.50% 5	2.50% 1	40	2.97

Q8 Please rank the following factors contributing to effective response and staff turnover within the department, with 5 being the most significant and 1 being the least significant:

Answered: 42 Skipped: 3



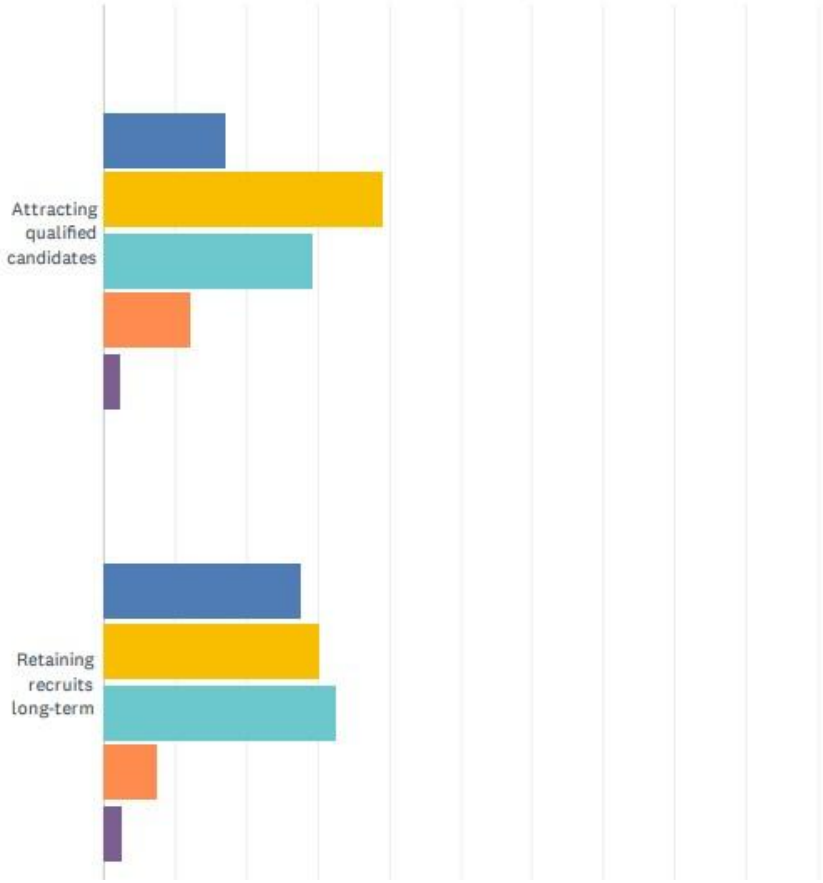
Q8 Continued.



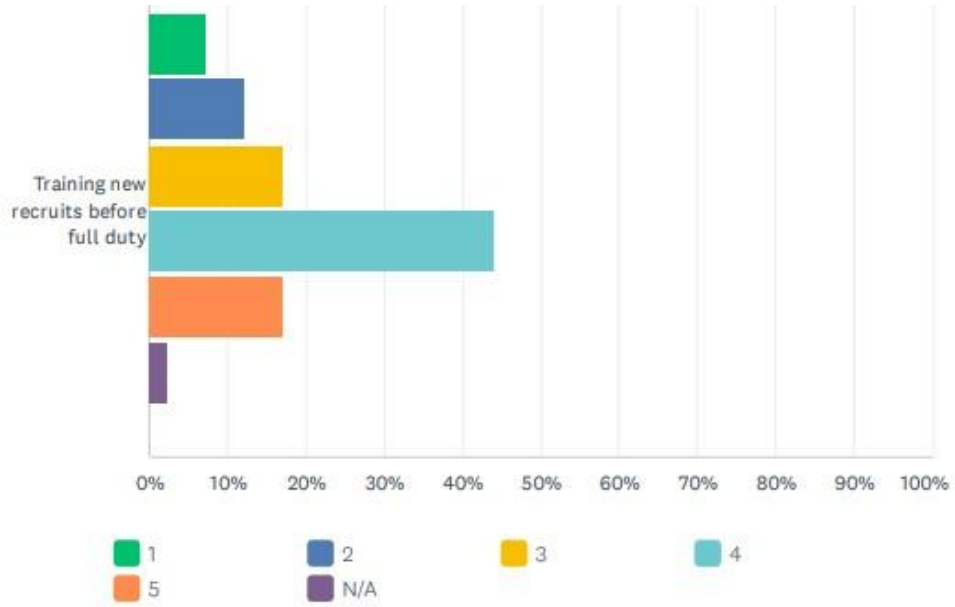
	1	2	3	4	5	N/A	TOTAL	WEIGHTED AVERAGE
Job stress and burnout	7.69% 3	35.90% 14	33.33% 13	12.82% 5	7.69% 3	2.56% 1	39	2.76
Compensation and benefits	23.81% 10	16.67% 7	33.33% 14	21.43% 9	2.38% 1	2.38% 1	42	2.61
Work-life balance	0.00% 0	7.14% 3	30.95% 13	47.62% 20	11.90% 5	2.38% 1	42	3.66
Retirement/Attrition	9.76% 4	26.83% 11	24.39% 10	29.27% 12	4.88% 2	4.88% 2	41	2.92

Q9 Please rank the following aspects of the recruiting program in order of effectiveness, with 5 being the most effective and 1 being the least effective:

Answered: 41 Skipped: 4



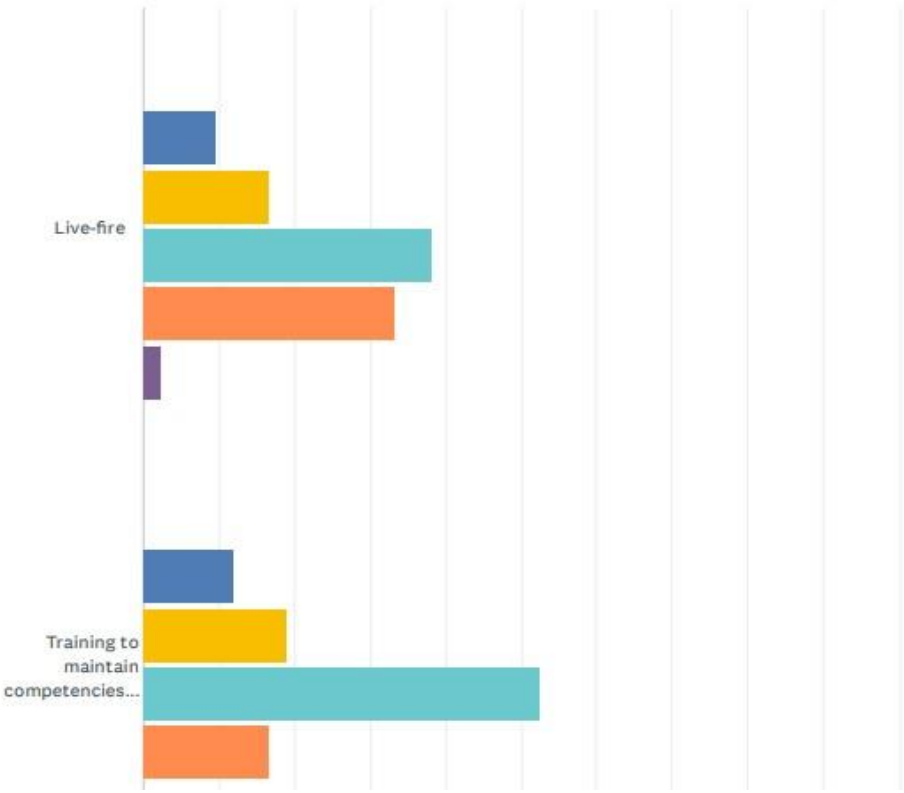
Q9 Continued.



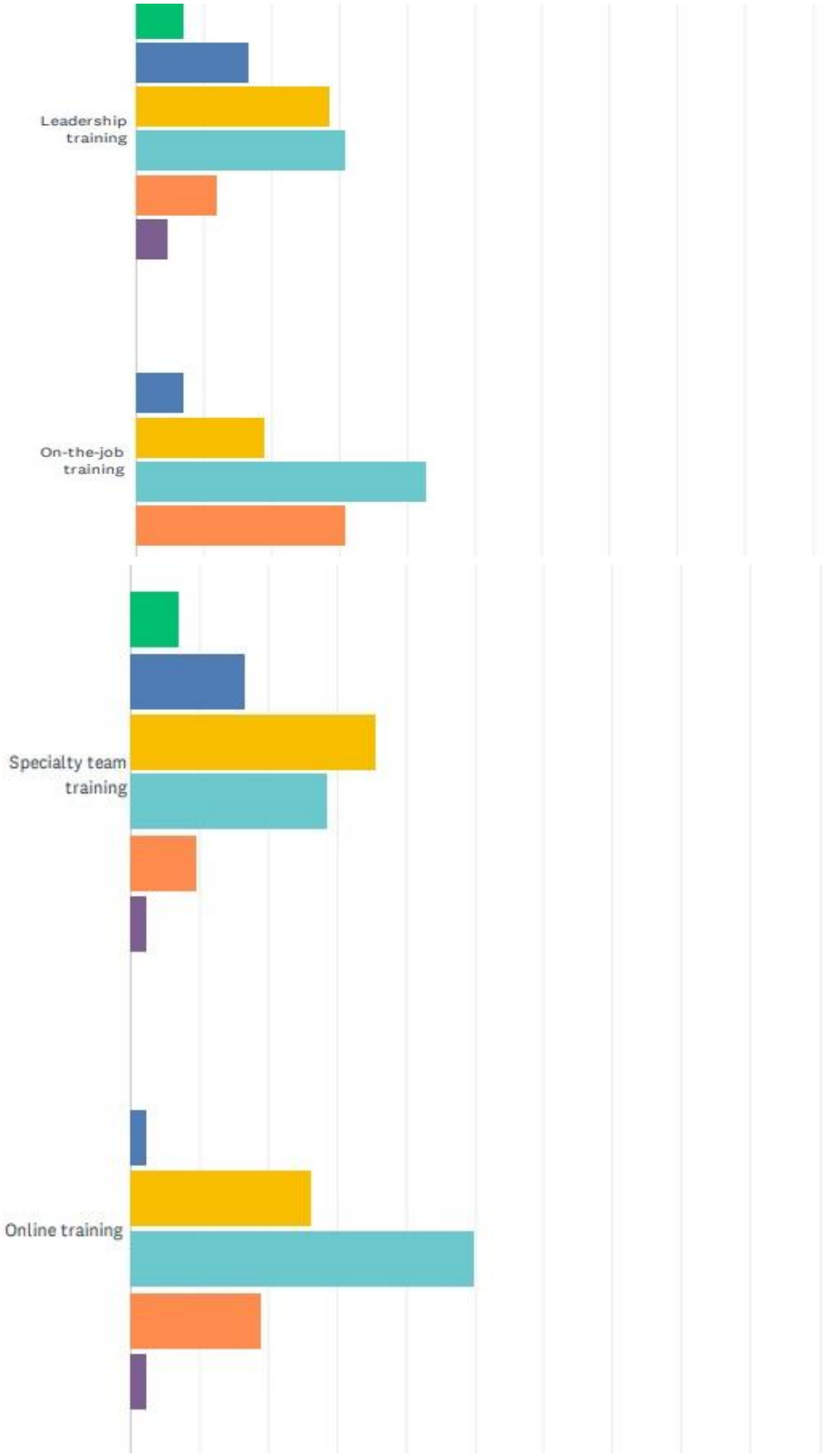
	1	2	3	4	5	N/A	TOTAL	WEIGHTED AVERAGE
Attracting qualified candidates	0.00% 0	17.07% 7	39.02% 16	29.27% 12	12.20% 5	2.44% 1	41	3.38
Retaining recruits long-term	0.00% 0	27.50% 11	30.00% 12	32.50% 13	7.50% 3	2.50% 1	40	3.21
Training new recruits before full duty	7.32% 3	12.20% 5	17.07% 7	43.90% 18	17.07% 7	2.44% 1	41	3.52

Q10 Please rank the following training aspects, with 5 being the most adequate and 1 being the least adequate:

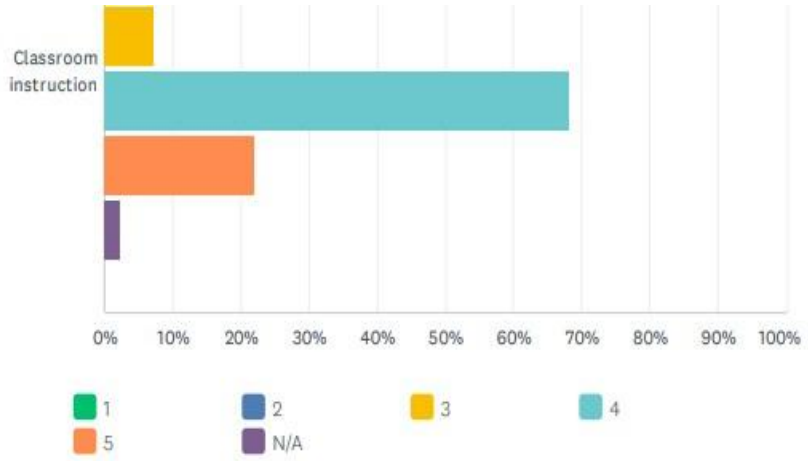
Answered: 42 Skipped: 3



Q10 Continued.



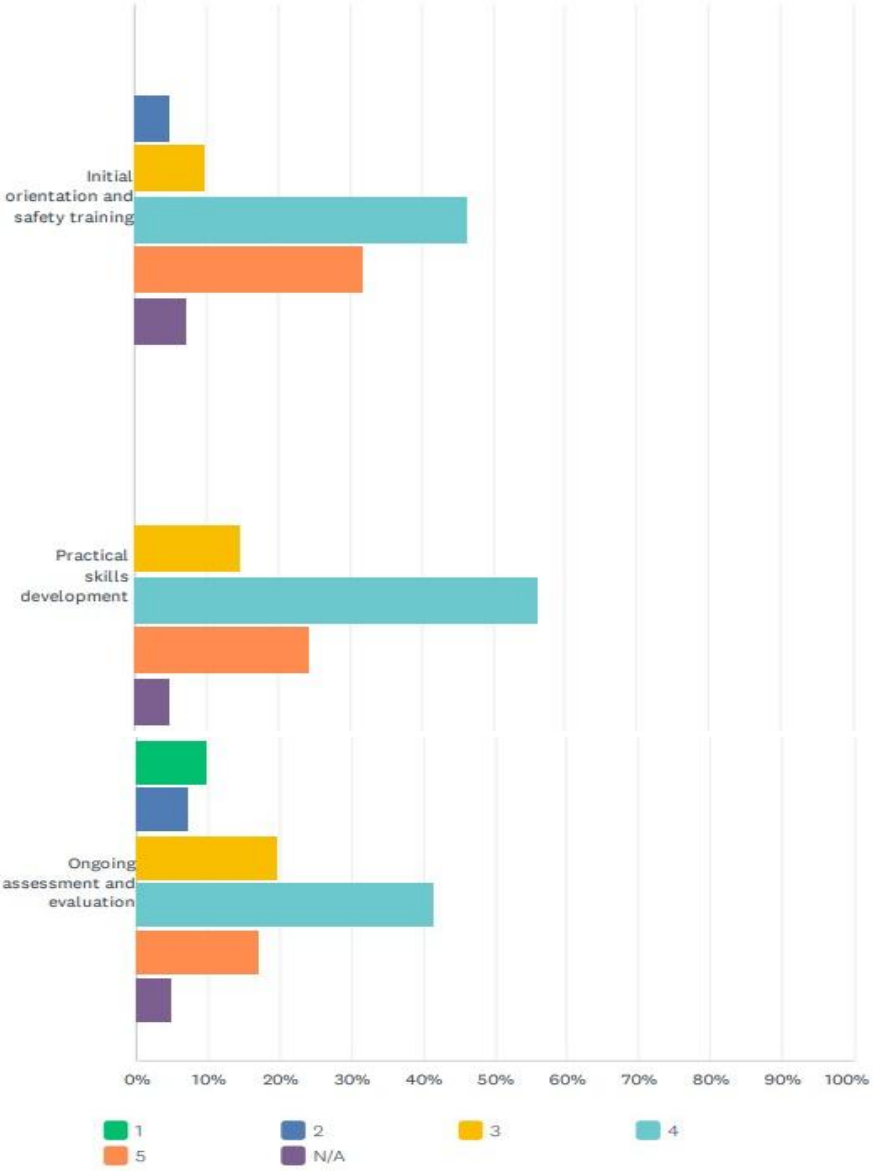
Q10 Continued.



	1	2	3	4	5	N/A	TOTAL	WEIGHTED AVERAGE
Live-fire	0.00% 0	9.52% 4	16.67% 7	38.10% 16	33.33% 14	2.38% 1	42	3.98
Training to maintain competencies and certifications	0.00% 0	11.90% 5	19.05% 8	52.38% 22	16.67% 7	0.00% 0	42	3.74
Leadership training	7.14% 3	16.67% 7	28.57% 12	30.95% 13	11.90% 5	4.76% 2	42	3.25
On-the-job training	0.00% 0	7.14% 3	19.05% 8	42.86% 18	30.95% 13	0.00% 0	42	3.98
Specialty team training	7.14% 3	16.67% 7	35.71% 15	28.57% 12	9.52% 4	2.38% 1	42	3.17
Online training	0.00% 0	2.38% 1	26.19% 11	50.00% 21	19.05% 8	2.38% 1	42	3.88
Classroom instruction	0.00% 0	0.00% 0	7.32% 3	68.29% 28	21.95% 9	2.44% 1	41	4.15

Q11 Please rank the following phases of recruit training in order of adequacy before full duty, with 5 being the most adequate and 1 being the least adequate:

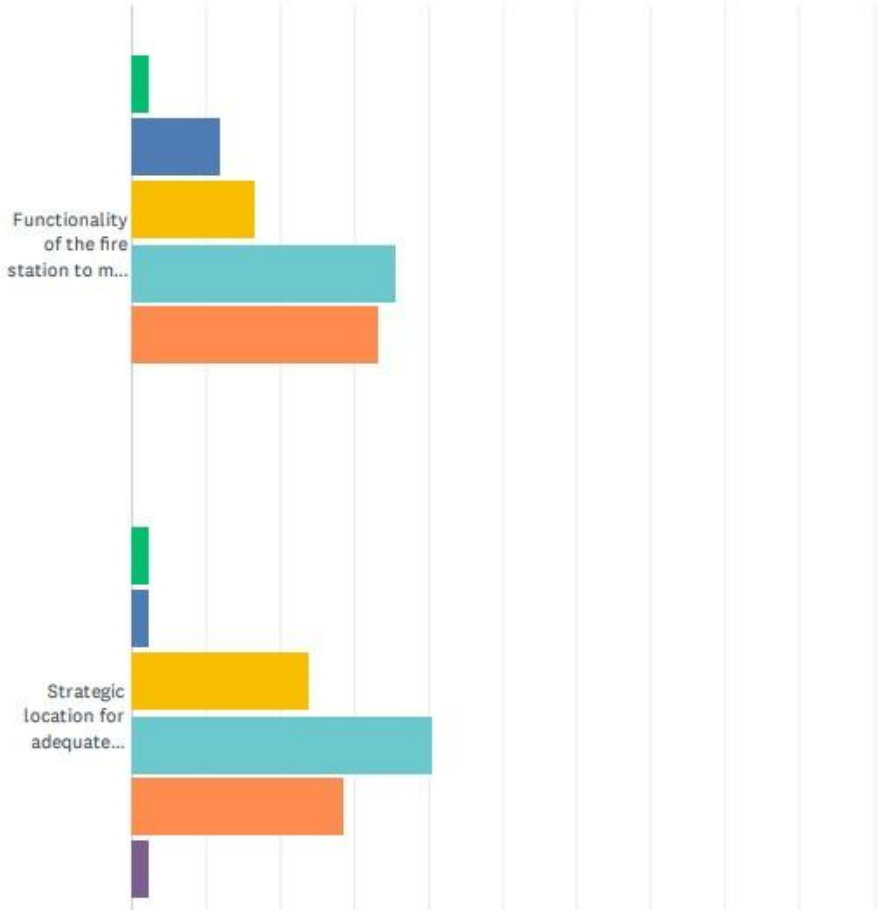
Answered: 41 Skipped: 4



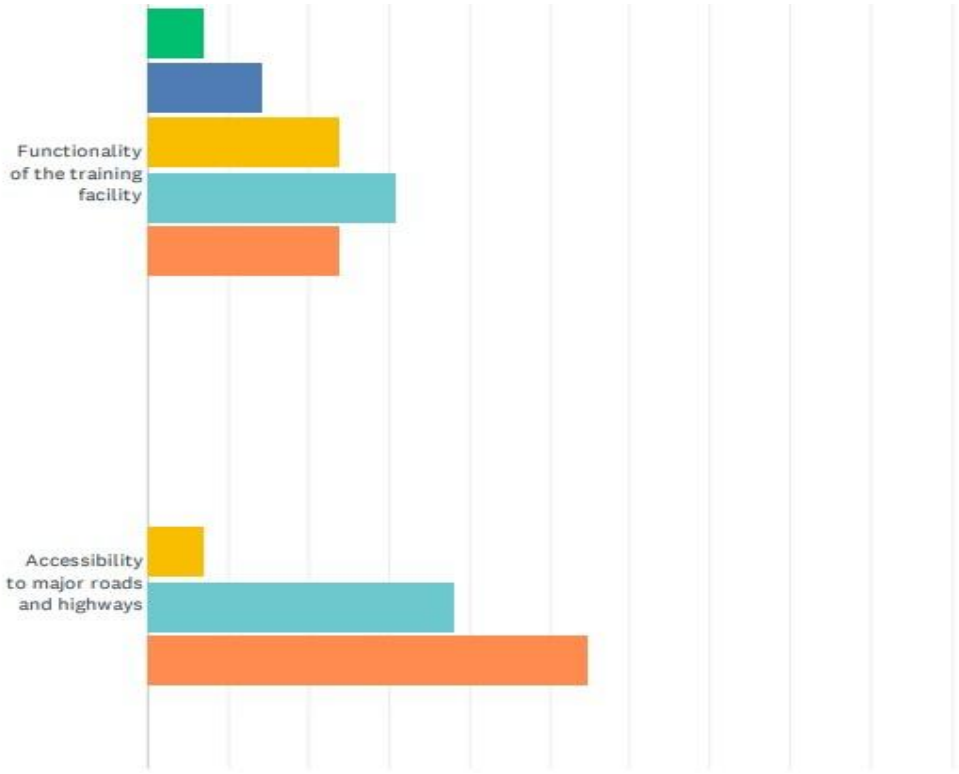
	1	2	3	4	5	N/A	TOTAL	WEIGHTED AVERAGE
Initial orientation and safety training	0.00% 0	4.88% 2	9.76% 4	46.34% 19	31.71% 13	7.32% 3	41	4.13
Practical skills development	0.00% 0	0.00% 0	14.63% 6	56.10% 23	24.39% 10	4.88% 2	41	4.10
Ongoing assessment and evaluation	9.76% 4	7.32% 3	19.51% 8	41.46% 17	17.07% 7	4.88% 2	41	3.51

Q12 Please rank the following aspects of the fire facility(ies) on how well they meet the department's needs, with 5 being the best and 1 being the worst:

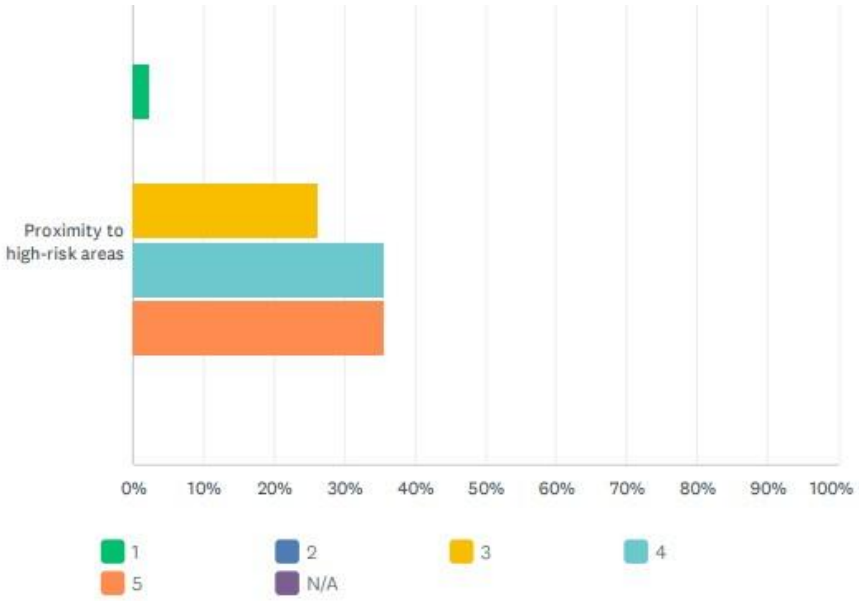
Answered: 42 Skipped: 3



Q12 Continued.



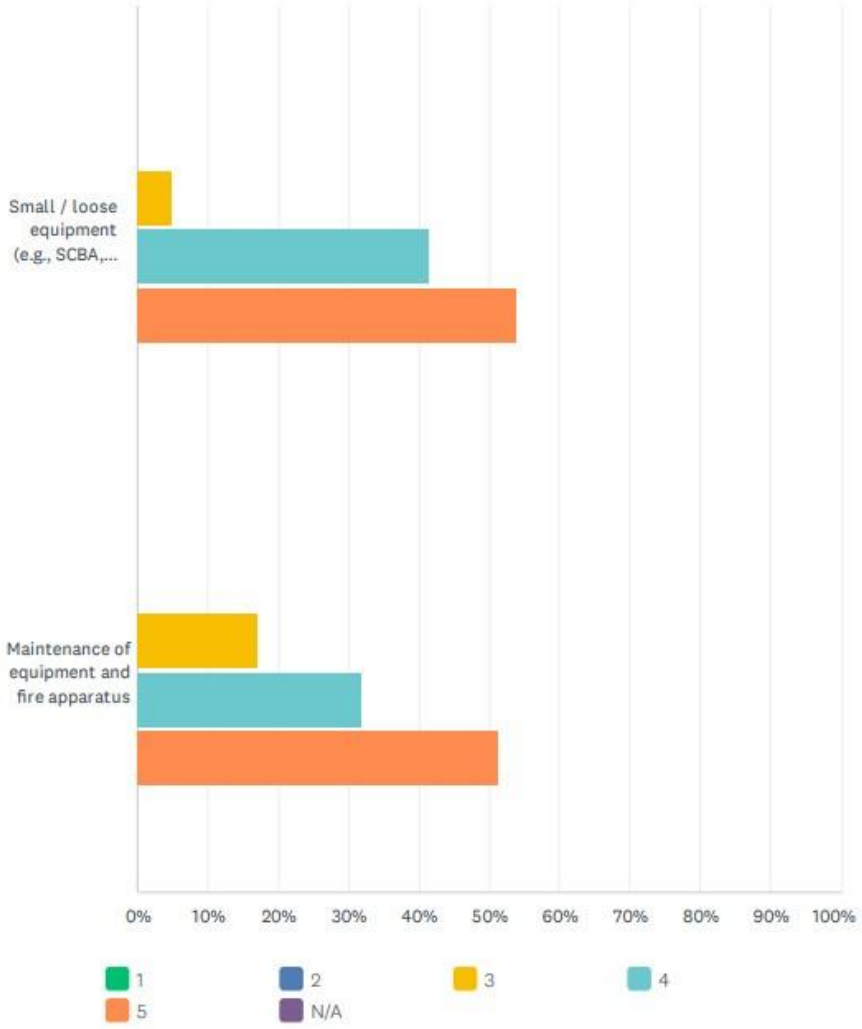
Q12 Continued.



	1	2	3	4	5	N/A	TOTAL	WEIGHTED AVERAGE
Functionality of the fire station to meet operational needs	2.38% 1	11.90% 5	16.67% 7	35.71% 15	33.33% 14	0.00% 0	42	3.86
Strategic location for adequate geographic coverage	2.38% 1	2.38% 1	23.81% 10	40.48% 17	28.57% 12	2.38% 1	42	3.93
Functionality of the training facility	7.14% 3	14.29% 6	23.81% 10	30.95% 13	23.81% 10	0.00% 0	42	3.50
Accessibility to major roads and highways	0.00% 0	0.00% 0	7.14% 3	38.10% 16	54.76% 23	0.00% 0	42	4.48
Proximity to high-risk areas	2.38% 1	0.00% 0	26.19% 11	35.71% 15	35.71% 15	0.00% 0	42	4.02

Q13 Please rank the following equipment resources, with 5 being the most adequate and 1 being the least adequate:

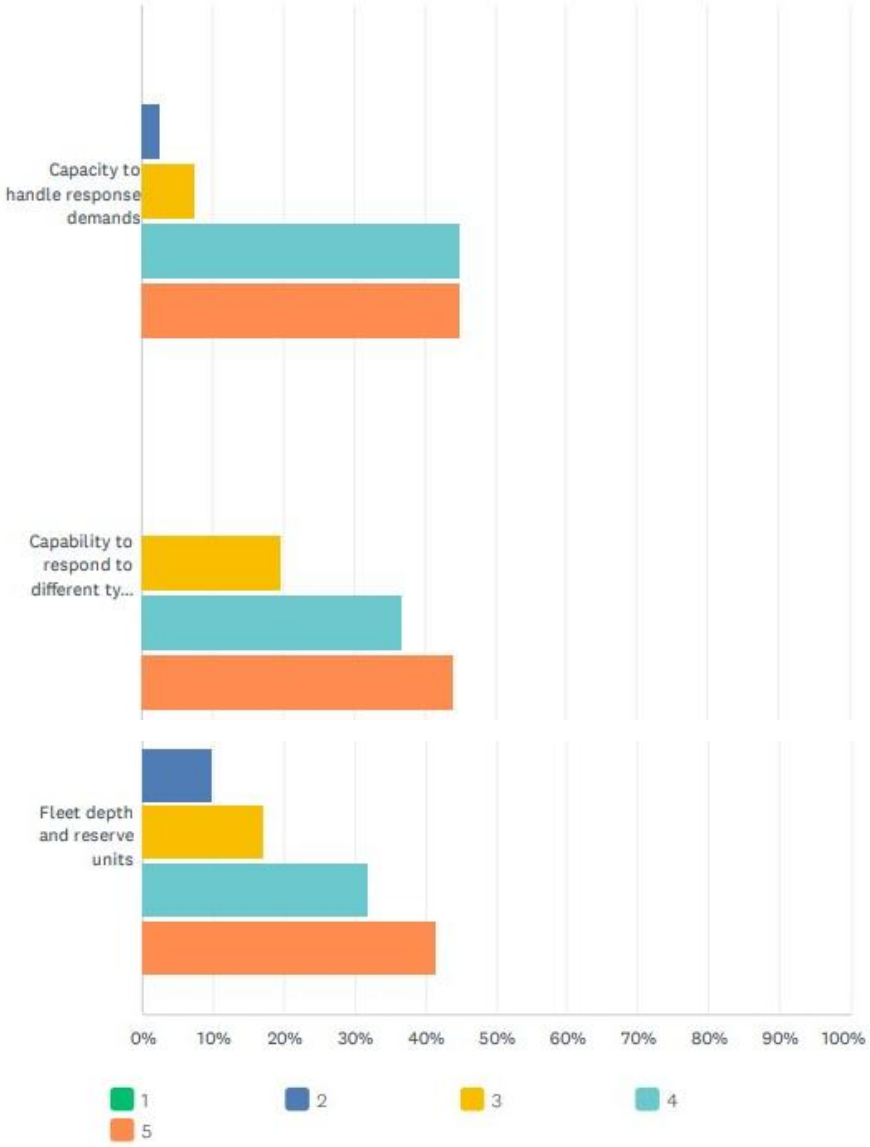
Answered: 41 Skipped: 4



	1	2	3	4	5	N/A	TOTAL	WEIGHTED AVERAGE
Small / loose equipment (e.g., SCBA, TIC, hydraulic equipment)	0.00% 0	0.00% 0	4.88% 2	41.46% 17	53.66% 22	0.00% 0	41	4.49
Maintenance of equipment and fire apparatus	0.00% 0	0.00% 0	17.07% 7	31.71% 13	51.22% 21	0.00% 0	41	4.34

Q14 Please rank the following aspects of fire apparatus and light-duty vehicle fleet in order of their effectiveness in meeting operational demands, with 5 being the most effective and 1 being the least effective:

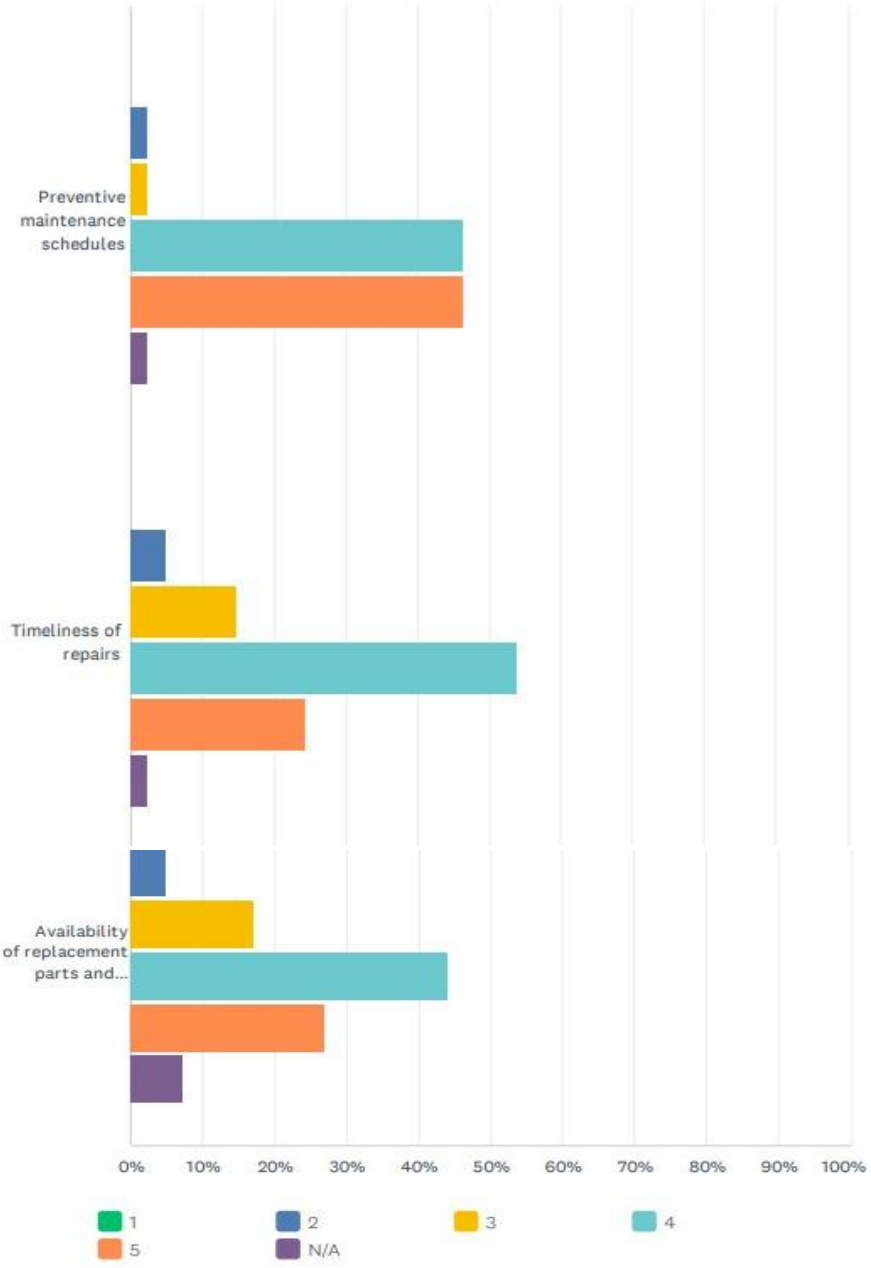
Answered: 41 Skipped: 4



	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
Capacity to handle response demands	0.00% 0	2.50% 1	7.50% 3	45.00% 18	45.00% 18	40	4.33
Capability to respond to different types of emergencies	0.00% 0	0.00% 0	19.51% 8	36.59% 15	43.90% 18	41	4.24
Fleet depth and reserve units	0.00% 0	9.76% 4	17.07% 7	31.71% 13	41.46% 17	41	4.05

Q15 Please rank the following maintenance practices in order of adequacy, with 5 being the most adequate and 1 being the least adequate:

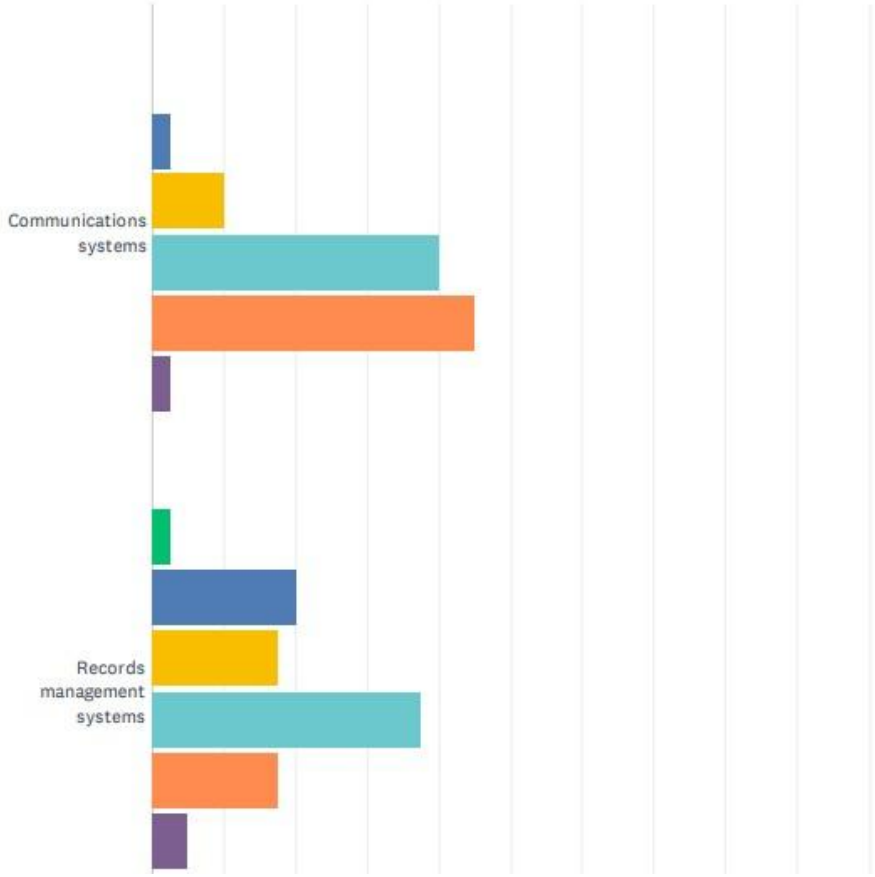
Answered: 41 Skipped: 4



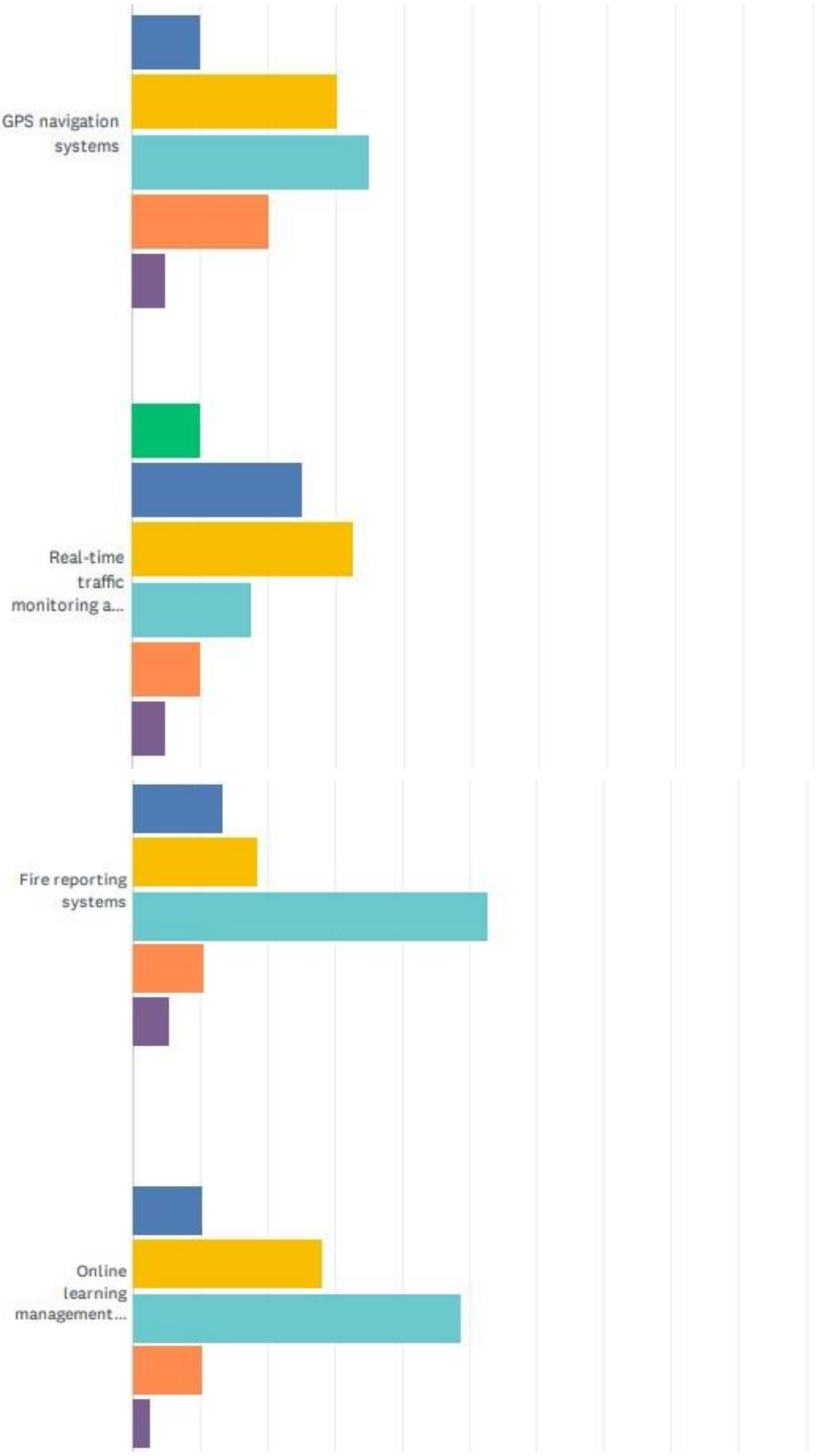
	1	2	3	4	5	N/A	TOTAL	WEIGHTED AVERAGE
Preventive maintenance schedules	0.00% 0	2.44% 1	2.44% 1	46.34% 19	46.34% 19	2.44% 1	41	4.40
Timeliness of repairs	0.00% 0	4.88% 2	14.63% 6	53.66% 22	24.39% 10	2.44% 1	41	4.00
Availability of replacement parts and resources	0.00% 0	4.88% 2	17.07% 7	43.90% 18	26.83% 11	7.32% 3	41	4.00

Q16 Please rank the following technology areas in order of how well the service keeps pace with advancements in technology and process, with 5 being the most up-to-date and 1 being the least up-to-date:

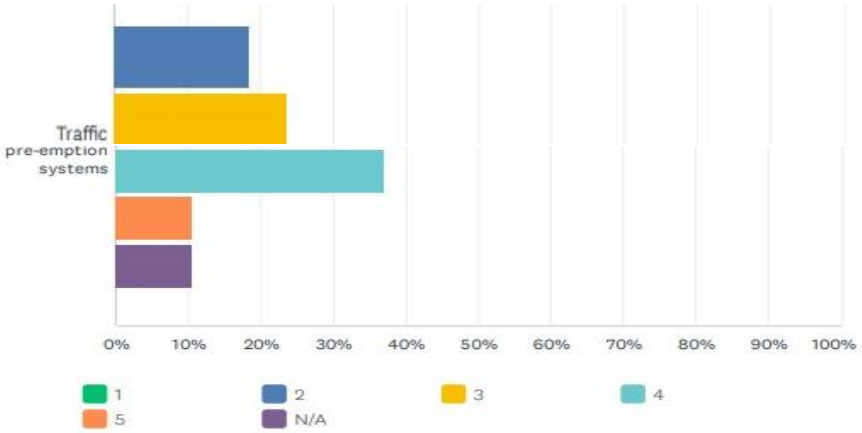
Answered: 40 Skipped: 5



Q16 Continued.



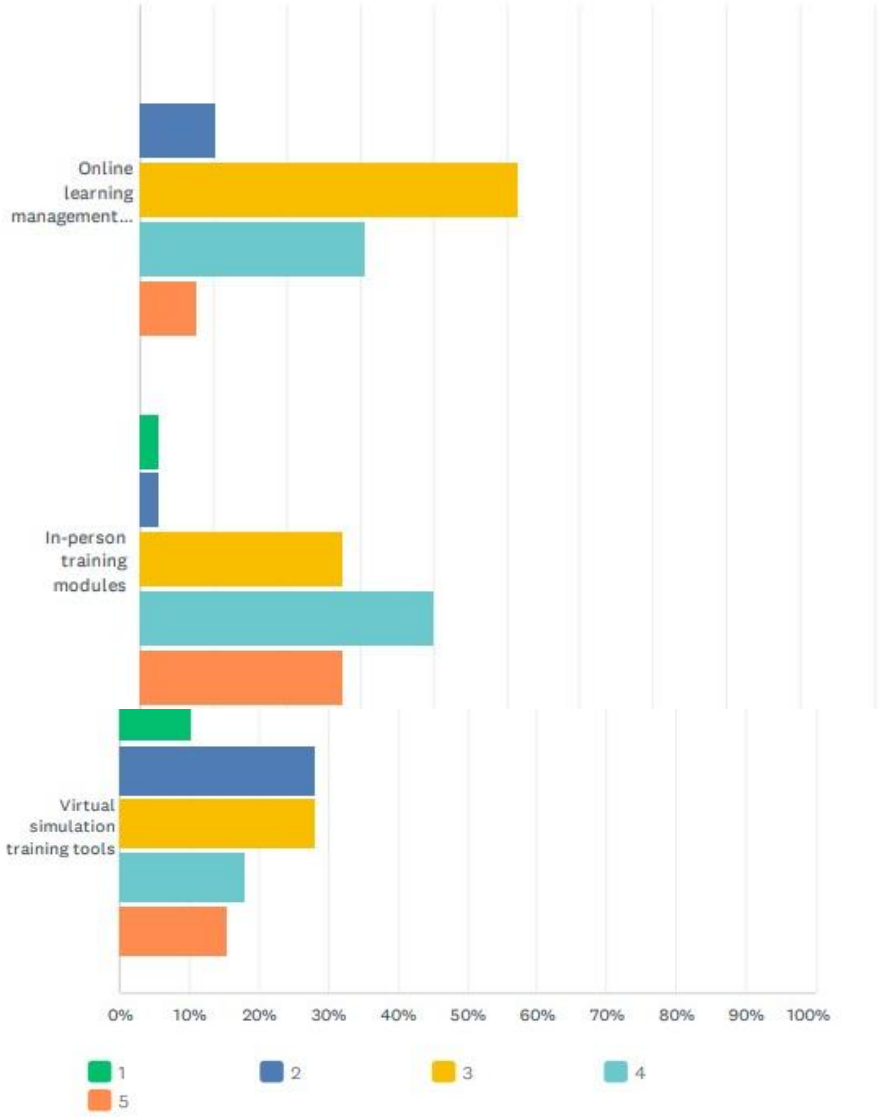
Q16 Continued.



	1	2	3	4	5	N/A	TOTAL	WEIGHTED AVERAGE
Communications systems	0.00% 0	2.50% 1	10.00% 4	40.00% 16	45.00% 18	2.50% 1	40	4.31
Records management systems	2.50% 1	20.00% 8	17.50% 7	37.50% 15	17.50% 7	5.00% 2	40	3.50
Mobile CAD systems	7.69% 3	17.95% 7	17.95% 7	33.33% 13	10.26% 4	12.82% 5	39	3.24
Station alerting and pre-alerting systems	2.50% 1	10.00% 4	15.00% 6	45.00% 18	27.50% 11	0.00% 0	40	3.85
GPS navigation systems	0.00% 0	10.00% 4	30.00% 12	35.00% 14	20.00% 8	5.00% 2	40	3.68
Real-time traffic monitoring and updates	10.00% 4	25.00% 10	32.50% 13	17.50% 7	10.00% 4	5.00% 2	40	2.92
Fire reporting systems	0.00% 0	13.16% 5	18.42% 7	52.63% 20	10.53% 4	5.26% 2	38	3.64
Online learning management systems (LMS)	0.00% 0	10.26% 4	28.21% 11	48.72% 19	10.26% 4	2.56% 1	39	3.61
Traffic pre-emption systems	0.00% 0	18.42% 7	23.68% 9	36.84% 14	10.53% 4	10.53% 4	38	3.44

Q17 Please rank the following training technologies in order of their effectiveness in supporting continuous learning, with 5 being the most effective and 1 being the least effective:

Answered: 40 Skipped: 5



	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
Online learning management systems (LMS)	0.00% 0	10.26% 4	51.28% 20	30.77% 12	7.69% 3	39	3.36
In-person training modules	2.50% 1	2.50% 1	27.50% 11	40.00% 16	27.50% 11	40	3.88
Virtual simulation training tools	10.26% 4	28.21% 11	28.21% 11	17.95% 7	15.38% 6	39	3.00

Appendix E: Apparatus and Light Vehicle Inventory

Fire District: Acheson			
			
Unit Number:	Engine 5 19-076	Unit Number:	Engine 8 19-102
Year/Make:	2013 Rosenbauer Commander	Year/Make:	2020 Spartan Metro Star MFD / Fort Garry
Type:	1 Engine	Type:	1 Engine
Odometer (kms.):	65990	Odometer (kms.):	35042
Pump Capacity:	5682	Pump Capacity:	5682
Tank Capacity: (Water)	4546	Tank Capacity: (Water)	3864
Foam Capacity:	113	Foam Capacity:	113
Delivery Method:	Foam Pro	Delivery Method:	Foam Pro
Usage:	Front line support engine for fires, alarms, MVC, rescues and medical aid etc.	Usage:	Spare County Engine used if frontline engine is down

Fire District: Acheson			
			
Unit Number	Rescue 5 19-074	Unit Number	Tanker 5 19-075
Year/Make	2013 Freightliner M2 112 / Rosenbauer walk-in	Year/Make	2013 Freightliner M2 112 / Fort Garry
Type	NA	Type	Tender S2
Odometer (kms)	23839	Odometer (kms)	40392
Pump Capacity:	NA	Pump Capacity:	4773
Tank Capacity: (Water)	NA	Tank Capacity: (Water)	12274
Foam Capacity:	NA	Foam Capacity:	227
Delivery Method:		Delivery Method:	
Usage:	Rescue truck has hydraulic, rope, ice rescue and pneumatic tools. Support vehicle for Fire events	Usage:	Water support

Fire District: Acheson			
			
Unit Number:	Tower 5 19-087	Unit Number:	Squad 5 19-069
Year/Make:	2016 Sutphen Monarch SPI112	Year/Make:	2013 Ford F-550 / General Body & Equipment
Type:	112’ Mid mount Aeriel	Type:	Type 6 Engine
Odometer (kms.):	16571	Odometer (kms.):	58385
Pump Capacity:	11365	Pump Capacity:	1000
Tank Capacity: (Water)	NA	Tank Capacity: (Water)	1136
Foam Capacity:	2273	Foam Capacity:	45
Delivery Method:	Foam Pro	Delivery Method:	Foam Pro
Usage:	Elevated master streams and platform	Usage:	Wildfires and support.

Fire District: Acheson			
			
Unit Number	Ranger 5 19-077	Unit Number	Red 5 19-096
Year/Make	2014 Polaris Ranger 6x6 UTV	Year/Make	2019 Chevrolet Suburban 4x4
Type	Side by Side	Type	Support Vehicle
Odometer (kms)	1676	Odometer (kms)	75272
Pump Capacity:	High Pressure Pump	Pump Capacity:	
Tank Capacity: (Water)	360	Tank Capacity: (Water)	
Foam Capacity:	19	Foam Capacity:	
Delivery Method:	Foam Pro	Delivery Method:	
Usage:	Off road UTV for fire suppression, transport, and rescue	Usage:	Primary use is for fire investigation. Also, a back up support or on Call vehicle

Fire District: Acheson			
			
Unit Number:	Red 7 19-083	Unit Number:	MESA 1 19-089
Year/Make:	2019 Chevrolet Silverado 2500 4x4 w/ removable wildland skid	Year/Make:	2010 Freightliner MMI 060428
Type:	Support Vehicle	Type:	Mobile Incident Command
Odometer (kms.):	191493	Odometer (kms.):	31501
Pump Capacity:		Pump Capacity:	
Tank Capacity: (Water)		Tank Capacity: (Water)	
Foam Capacity:		Foam Capacity:	
Delivery Method:		Delivery Method:	
Usage:	Support Vehicle has a skid unit that can be placed in during hazard season. Also pulls our Cache Trailer	Usage:	Used as site command for type three and above events

Fire District: Parkland Village			
			
Unit Number:	Engine 2	Unit Number:	Tanker 2
Year/Make:	2018 Spartan Gladiator ELFD / Fort Garry	Year/Make:	2010 Freightliner M2 112 / Rosenbauer
Type:	Type 1 Engine	Type:	Type 1 Tactical Tanker
Odometer (kms.):	48636	Odometer (kms.):	58025
Pump Capacity:	5682	Pump Capacity:	2841
Tank Capacity: (Water)	4546	Tank Capacity: (Water)	13638
Foam Capacity:	227	Foam Capacity:	NA
Delivery Method:	Foam Pro	Delivery Method:	NA
Usage:	Front line support engine for fires, alarms, MVC, rescues and medical aid etc.	Usage:	Water support and used in as Blocker on roadway incidents

			
Unit Number	Squad 2	Unit Number	Rescue 2
Year/Make	2013 Ford F-550 4x4 / General Body & Equipment	Year/Make	2013 Freightliner M2 106 / Rosenbauer
Type	Type 6 Engine	Type	NA
Odometer (kms)	52887	Odometer (kms)	29226
Pump Capacity:	1000	Pump Capacity:	NA
Tank Capacity: (Water)	1136	Tank Capacity: (Water)	NA
Foam Capacity:	45	Foam Capacity:	NA
Delivery Method:	Foam Pro	Delivery Method:	NA
Usage:	Wildfire response and support vehicle.	Usage:	Rescue truck has hydraulic, rope, ice rescue and pneumatic tools. Support vehicle for Fire events

Fire District: Parkland Village		Fire District: West Central	
			
Unit Number:	Ranger 2 19-065	Unit Number:	Engine 4 19-106
Year/Make:	2012 Polaris Ranger UTV 6x6	Year/Make:	2022 Rosenbauer Commander
Type:	NA	Type:	Type 1 Engine
Odometer (kms.):	1256	Odometer (kms.):	28085
Pump Capacity:	90	Pump Capacity:	4773
Tank Capacity: (Water)	360	Tank Capacity: (Water)	4546
Foam Capacity:	NA	Foam Capacity:	136 A 227 B
Delivery Method:	NA	Delivery Method:	Foam Pro
Usage:	Off road vehicle for fire suppression, transport, and rescue.	Usage:	Front line support engine for fires, alarms, MVC, rescues and medical aid etc. This unit also has hydraulic tools to support MVCs

Fire District: West Central			
			
Unit Number	Tanker 4 19-095	Unit Number	Squad 4 19-113
Year/Make	2020 Freightliner M2 112 / Fort Garry	Year/Make	2023 Ford F-550 XLT SD 4X4 Crew Cab / Rocky Mountain Phoenix
Type	Type S2	Type	Type 6 Engine
Odometer (kms)	25435	Odometer (kms)	5033
Pump Capacity:	5682	Pump Capacity:	1000
Tank Capacity: (Water)	16365	Tank Capacity: (Water)	1500
Foam Capacity:	272	Foam Capacity:	36
Delivery Method:	Foam Pro	Delivery Method:	Foam Pro
Usage:	Water support and used in as blocker on roadway incidents.	Usage:	Wildfire Response and support vehicle. Also has hydraulic tools for MVCs.

Fire District: West Central			
			
Unit Number:	Engine 7 19-034	Unit Number:	Tanker 7 19-067
Year/Make:	2002 International 4800 4x4 / Superior	Year/Make:	2013 Freightliner 108SD
Type:	NA	Type:	NA
Odometer (kms.):	56136	Odometer (kms.):	25578
Pump Capacity:	Front Mount Pump 4000	Pump Capacity:	PM100 Vacuum Pump
Tank Capacity: (Water)	4546	Tank Capacity: (Water)	13638
Foam Capacity:	45	Foam Capacity:	NA
Delivery Method:	Foam Pro	Delivery Method:	NA
Usage:	Off road support engine for fires in difficult areas. Can also be used as a spare engine if needed.	Usage:	Water support and used in as blocker on roadway incidents.

Fire District: West Central			
			
Unit Number	Squad 7 19-063	Unit Number	Rescue Boat 4 19-009
Year/Make	2011 Ford F-550 4x4	Year/Make	2021 Zodiac Boat Pro 7
Type	NA	Type	NA
Odometer (kms)	90419	Odometer (kms)	NA
Pump Capacity:	1000	Pump Capacity:	NA
Tank Capacity: (Water)	1136	Tank Capacity: (Water)	NA
Foam Capacity:	45	Foam Capacity:	NA
Delivery Method:	Foam Pro	Delivery Method:	NA
Usage:	Wildfire response and support vehicle.	Usage:	Used for boat and water rescue on the lake.

Fire District: West Central			
			
Unit Number:	Ranger 4 19-070	Unit Number:	Ranger 7 19-085
Year/Make:	2015 Polaris Ranger tracked 6x6	Year/Make:	2015 Polaris Ranger 6x6
Type:	NA	Type:	NA
Odometer (kms.):	1361	Odometer (kms.):	771
Pump Capacity:	High Pressure Pump	Pump Capacity:	High Pressure Pump
Tank Capacity: (Water)	360	Tank Capacity: (Water)	360
Foam Capacity:	19	Foam Capacity:	19
Delivery Method:	Foam Pro	Delivery Method:	Foam Pro
Usage:	Off road vehicle for fire suppression, transport, and rescue.	Usage:	Off road vehicle for fire suppression, transport, and rescue.

Fire District: West Central		Fire District: Tomahawk	
			
Unit Number	Fleet 17-881	Unit Number	Engine 6 19-103
Year/Make	2022 GMC Sierra 4x4	Year/Make	2021 Pierce Saber 7010
Type	NA	Type	Type 1 Engine
Odometer (kms)	66253	Odometer (kms)	18116
Pump Capacity:	NA	Pump Capacity:	5682
Tank Capacity: (Water)	NA	Tank Capacity: (Water)	3714
Foam Capacity:	NA	Foam Capacity:	77
Delivery Method:	NA	Delivery Method:	Foam Pro
Usage:	Support Vehicle. No lights and sirens.	Usage:	Front line support engine for fires, alarms, MVC, rescues and medical aid etc.

Fire District: Tomahawk			
			
Unit Number:	Tanker 6 19-107	Unit Number:	Squad 6 19-090
Year/Make:	2022 Freightliner M2 112 / Fort Garry	Year/Make:	2017 Ford F-550 SD 4x4 / 2018 Rocky Mountain Phoenix
Type:	Type S2	Type:	Type 6 Engine
Odometer (kms.):	NA	Odometer (kms.):	NA
Pump Capacity:	5682	Pump Capacity:	1000
Tank Capacity: (Water)	13368	Tank Capacity: (Water)	1136
Foam Capacity:	272	Foam Capacity:	45
Delivery Method:	Foam Pro	Delivery Method:	Foam Pro
Usage:	Water support and used in as blocker on roadway incidents.	Usage:	Wildfire response and support vehicle.

Fire District: Tomahawk			
			
Unit Number	Rescue 6 19-081	Unit Number	Ranger 6 19-084
Year/Make	2015 Freightliner M2 106	Year/Make	2015 Polaris Ranger 6x6
Type	NA	Type	NA
Odometer (kms)	24425	Odometer (kms)	1164
Pump Capacity:	NA	Pump Capacity:	High Pressure Pump
Tank Capacity: (Water)	NA	Tank Capacity: (Water)	360
Foam Capacity:	NA	Foam Capacity:	19
Delivery Method:	NA	Delivery Method:	Foam Pro
Usage:	Rescue truck has hydraulic, rope, ice rescue and pneumatic tools. Support vehicle for Fire events.	Usage:	Off road vehicle for fire suppression, transport, and rescue.

Fire District: Tomahawk	
	
Unit Number	Red 6 19-064
Year/Make	2011 Chevrolet
Type	Pick up 3500
Odometer (kms)	253055
Pump Capacity:	NA
Tank Capacity: (Water)	NA
Foam Capacity:	NA
Delivery Method:	NA
Usage:	Fleet support vehicle that has the ability to have a water skid unit placed in the box, move equipment, and personnel.