Town of Okotoks

OKOTOKS FIRE & RESCUE FIRE AND RESCUE SERVICES MASTER PLAN

August 13, 2024

Presented to:

Presented by:

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

www.behrintegrated.com

PREFACE

This document serves as the Town of Okotoks Fire and Rescue Services Master Plan. The primary motivation for developing this document is for the community in establishing a long-term strategy to protect life and property based on community 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 Trevor Brice. While there are some challenges for Okotoks Fire & Rescue, Chief Brice remains positive in his efforts to enhance the department and public safety for the community and its citizens. Okotoks Fire & Rescue Services' leadership and firefighters are dedicated and engaged in all facets of their community. Their pride in the department and their service is clear and evident.

COPYRIGHT

ACRONYMS

Acronym	Definition	Acronym	Definition
ACP	Alberta College of Paramedics	MVI	motor vehicle incidents
AEMA	Alberta Emergency Management Agency	NBC	National Building Code of Canada
AOHS	Alberta Occupational Health and Safety	NFPA	National Fire Protection Associations
CFAI	Commission of Fire Accreditation International	NG911	Next Generation 911
CRA	Community Risk Assessment	NIST	National Institute of Standards and Technology
CRTC	Canadian Radio-Television Commission	OFR	Okotoks Fire & Rescue
CSA	Canadian Standards Association	OHS	Occupational Health & Safety
EMS	Emergency Medical Services	PCP	primary care paramedic
ERF	Effective Response Force	PM	pre-maintenance program
EVT	Emergency Vehicle Technician	POC	Paid On-Call
FF	Firefighter	PPE	Personal Protective Equipment
FRESC	Foothills Regional Emergency Services Commission	PSAP	Public Safety Answering Point
FRSMP	Fire and Rescue Services Master Plan	PT	Part-time
FT	Full-time	QMP	Quality Management Plan
FTE	Full-time Equivalent	RMS	Records Management System
FUS	Fire Underwriters Survey	SCBA	Self Contained Breathing Apparatus
GPM	Gallons per Minute	SCO	Safety Codes Officer
IAFF	International Association of Fire Fighters	SOC	Standards of Cover
IAP	Incident Action Plan	SOG	Standard Operating Guidelines
KPI	key performance indicators	SOP	Standard Operating Procedures
KSA	Knowledge, Skills, Abilities	WCB	Workers' Compensation Board
MDP	Municipal Development Plan	WUI	Wildland Urban Interface
MDS	Minimum Duty Strength		

TABLE OF CONTENTS

EXECUTIVE SUMMARY I
Introduction i
Strategic Goals i
Project Approach and Outcomes ii
Fire Services Master Plan Process ii
Consultation and Comparative Analysis iii
Community Risk Assessment iv
Department Overview ii
Summary of Recommendations iv
Conclusion viii
SECTION 1 INTRODUCTION 1
1.1 Background and Significance 1
1.2 Goals and Objectives 1
1.3 Project Scope 2
1.4 Fire Services Master Plan Process 3
1.5 Consultative Process 3
1.5.1 Community and Fire Station Tour 3
1.5.2 Targeted Interviews 3
1.5.3 Online Firefighter Survey 4
1.5.4 Municipal Comparative Analysis 6
1.6 Applicable Standards, References and Legislation 6
1.7 Study Considerations 7
SECTION 2 COMMUNITY PROFILE AND RISK OVERVIEW 8
2.1 Community Overview 8
2.2 Population and Economic Drivers 9
2.3 Growth Projections 10
2.4 Community Demographics 10
2.5 Community Planning and Development 11
2.6 Community Risk Assessment 12
2.6.1 Factors Contributing to Risk 15
2.6.2 Risk Management 15
2.7 Risk Evaluation vs. Service Levels 16
2.8 Structural Fire Risk Analysis 20

2.9 Community Risk Analysis Overview 21
2.9.1 Fire Department Response Demand 22
2.9.2 Active Risk Reduction 22
2.9.3 Residential Sprinklers 23
2.9.4 Multiple Transportation Corridors 24
2.9.5 Dangerous Goods Response 24
2.9.6 Wildland Urban Interface Fires 25
2.9.7 Severe Weather Events 27
2.9.8 Airports 27
SECTION 3 DEPARTMENT PROFILE 29
3.1 Department Overview 29
3.1.1 Community Vision, Mission, Core Values and Guiding Principles of the Town of Okotoks 29
3.2 Human Resources 30
3.2.1 Staffing Complement 30
3.2.2 Department Leadership, Management and Operations 32
3.2.3 OFR Administrative Positions 34
3.2.4 OFR Non-Administrative Positions 35
3.2.5 Staffing Ratio 39
3.3 Remuneration, Recruitment, Selection, Retention, Promotion 41
3.3.1 Remuneration 41
3.3.2 Recruitment 41
3.3.3 Selection and Training of Recruit Firefighters 42
3.3.4 Retention 43
3.3.5 Promotions and Advancement 43
3.4 Training 44
3.4.1 Industry Recommended Qualifications 46
3.5 Health and Wellness 47
3.6 Policies, Procedures and Guidelines 48
3.7 Command Structure 49
3.8 Core Services 50
3.8.1 Structural Firefighting 51
3.8.2 Wildland Urban Interface 52
3.8.3 Medical First Response 52
3.8.4 Motor Vehicle Incidents, Vehicle Extrication 52

3.8.5 Dangerous Goods Response 53
3.8.6 Technical Rescue Services 54
3.8.7 Fire Prevention Services 55
3.8.8 Pre-Emergency Planning 58
3.8.9 Citizen Assist and Public Services 58
3.8.10 911 and Fire Dispatch 59
3.9 Emergency Management Program and Emergency Coordination Centre 61
3.10 Mutual Aid and Other Service Agreements 62
3.11 Facilities 65
3.11.1 Fire Station Overview and Assessment 65
3.11.2 Apparatus and Light Duty Vehicles 82
3.12 Ancillary and Firefighting Equipment 93
3.13 Personal Protective Equipment 94
3.13.1 Self-Contained Breathing Apparatus (SCBA) 95
3.14 Specialized Rescue Equipment 95
3.14.1 Rescue Tools 95
3.14.2 Wildland Firefighting 96
3.14.3 Water Rescue 96
3.14.4 Ice Rescue 96
3.14.5 Dangerous Goods Response 96
3.14.6 Low-Angle Rescue 96
3.15 Rehabilitation and Decontamination 97
3.16 Asset Management 98
3.17 Municipal Comparative Analysis 98
3.17.1 Department Profile 99
3.17.2 Budgets 102
3.17.3 Industry Standards 103
3.17.4 Response Data 104
SECTION 4 RESPONSE STATISTICS AND PERFORMANCE STANDARDS 107
4.1 Industry Standards and Alberta Fire Service Legislation 107
4.1.1 Alberta Occupational Health and Safety Guide for Firefighting 107
4.1.2 Alberta Building Code Limiting Distance and Fire Department Response Requirements 108
4.1.3 National Fire Protection Association Standards 109
4.2 Current and Future State for Response and Effective Response Force 110

4.2.1 Current State 110
4.2.2 Future State 114
4.3 Incident Type and Frequency 122
4.3 Intervention Time and NFPA 1710 Response Standards 128
4.3.1 Intervention Time 128
4.3.2 NFPA 1710 and OFR Performance Standards 129
4.4 Emergency Response Performance Analysis 131
4.4.1 Alarm Handling Performance 132
4.4.2 Assembly Time Performance 136
4.4.3 Travel Time Performance 137
4.4.4 Response Time Performance 139
4.5 Response Time Mapping Analysis 141
4.6 Effective Response Force (ERF) 147
4.7 Critical Task Analysis 149
4.8 Measuring, Managing and Reporting Performance 153
SECTION 5 CONCLUSION 158
APPENDICES 160
Appendix A: Glossary of Terms 161
Appendix B: List of Figures, Maps, Images and Tables 163
Appendix C: Theoretical Response Mapping Methodology 165
Appendix D: Online Firefighter Survey Results 169
Appendix E: Job Descriptions 183
Appendix F: Apparatus and Light Duty Vehicles 188

EXECUTIVE SUMMARY

Introduction

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

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 often one of the top priorities within most communities, but achieving this goal comes at a relatively high cost. The organizations 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 this Fire & Rescue Services Master Plan (FRSMP) is to conduct a comprehensive review of the Town of Okotoks Fire & Rescue (OFR) and produce a long-term strategic plan that spans up to 10 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 a strategic direction for the fire service, while highlighting opportunities for improved service delivery. This FRSMP 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, and policy development.

Strategic Goals

The Town of Okotoks and Okotoks Fire & Rescue will utilize the Community Risk Assessment to identify the fire safety risks within their designated response area as the basis to inform the development of goals and objectives for the delivery of fire protection and emergency response provided. Optimizing the methodology of the three lines of defense (Public Education, Fire Prevention and Code Enforcement, and Emergency Response) will allow the Town of Okotoks Fire & Rescue to provide a comprehensive fire protection program.

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.

Project Approach and Outcomes

While risks are the basis for triggering response decisions, our analysis also investigated the 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 to the community, businesses, and overall responder and public safety. This FRSMP also considers applicable legislation, industry-leading practices, and standards, along with current and anticipated risks to provide an unbiased analysis and evidence-based recommendations.

Ultimately, this FRSMP will determine the optimum service delivery model and serve as a 'blueprint' for the town to be more effective and efficient in the delivery of emergency services through current and future challenges.

Key aspects in the development of this plan included a community and station tour that focused on the overall footprint, topography, and transportation infrastructure of the community along with the various response zones for each of the two responding stations. Touring each station also provided an opportunity to conduct a general condition and operational functionality assessment on each station.

Targeted interviews and an online survey were also used to collect data and information. This process was used to promote an open discussion about the community, risks, general concerns related to the community and municipal operations. Participants were asked questions related to their areas of purview 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.

An industry peer municipal comparative analysis[1] of the fire service was 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.

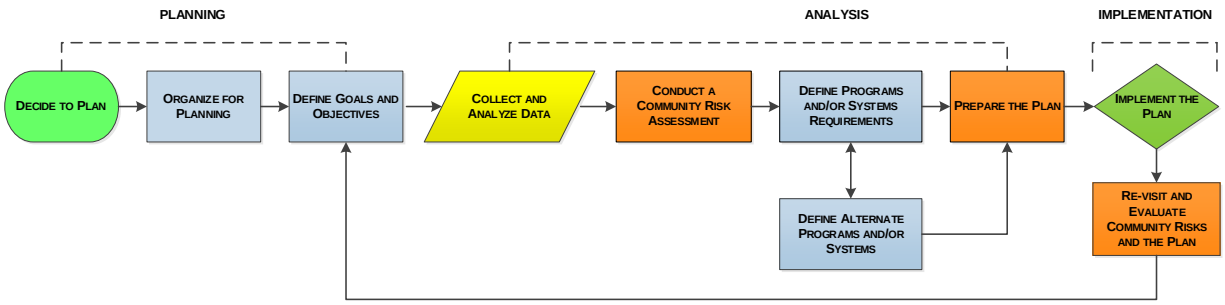
Fire Services Master Plan Process

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

[1] *Please see Section 3.17, Municipal Comparative Analysis, Page 98*

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 reasonably practicable, we also recommend a third-party update of the FRSMP 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



Consultation and Comparative Analysis

Three key aspects in the development of the FRSMP 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 zones for the current fire service station. Visiting the stations provided an opportunity to conduct a general condition and operational functionality assessment. This tour also provided the opportunity to meet with various OFR staff and discuss their respective interests regarding the FRSMP development.

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.

An industry peer comparative analysis[2] of OFR was 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.

[2] *Please see Section 3.17, Municipal Comparative Analysis, Page 98*

The communities who participated in the comparative analysis included:

- Town of Okotoks
- Town of Cochrane
- City of Leduc
- City of Lloydminster
- City of Spruce Grove
- City of Grande Prairie
- City of Airdrie

The seven surveyed fire services have operating budgets within the range of $4.1M to $17.6M annually. OFR occupies #4 of 7 for cost per capita and #3 of 7 of the percentage of the municipal budget spent on fire services, of all the municipalities surveyed at $221.58 per person and 10.06% of Okotoks' operating budget, respectively.

The percentage of the municipal budget for all fire services surveyed ranges from 3.85% to 13.87% of municipal operating budgets, and the cost per capita of these departments ranges from $134.28 to $354.00. The OFR's operating budget and cost per capita are within the middle-upper range of similarly staffed/operated fire services surveyed.

Community Risk Assessment

Every municipality has unique challenges and characteristics contributing to the overall risk profile of the community. A Community Risk Assessment (CRA) is a process used to identify, evaluate, and prioritize the nature and magnitude of all hazards, vulnerabilities, and risks to the public within a specific community or geographic area. As per NFPA 1300, the CRA serves to inform the development and implementation of future community risk reduction plans and programs, to mitigate, reduce or eliminate the community's risk.

Following the National Fire Protection Association (NFPA) standards, and the Commission on Fire Accreditation International (CFAI) guidelines, this CRA will serve as a component of the Town of Okotoks Community Risk Assessment for CFAI accreditation. The goal of the CRA is to assess and classify all fire and non-fire hazards within the community. This CRA will not define future goals and objectives for service delivery, but rather serve as a foundational document to further analyses in the town's Fire Service Master Plan.

NFPA 1300 identifies nine mandatory profiles that must be examined during the development of the community's CRA. The CRA will examine the nine mandatory profiles as listed below.

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

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, 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.

To provide additional context to assess fire department response capability the CRA offers an assessment of some of the medium, high, and maximum risks identified in the consultation process and analysis of fire department response data. Specifically, the risk factors that have an impact on OFR include:

- Community growth and anticipated additions and changes to building stock and types of construction
- Reliance on the Community Firefighter pool
- Municipal infrastructure
- Fire department response and spatial separation
- Transportation corridors including roads and railways
- Dangerous goods release
- Interface fires mixed with high winds and high temperatures
- Reliability and volume of firefighting water supply
- Other risks include natural events and weather-related emergencies.

Department Overview

OFR has a proud history of serving Okotoks and continues to evolve in their service delivery to meet the increasing demands of a growing community. OFR is currently considered a composite fire service, relying primarily on career full-time firefighters, supported by a small complement of community part-time firefighters responding out of two fire stations within the town boundaries.

OFR maintains an administrative structure supporting a combination of full-time and community part-time firefighters to deliver emergency services, fire prevention and public education within the Town of Okotoks. The career firefighters, except the fire chief and two deputy fire chiefs are represented by International Association of Fire Fighters (IAFF) Local 4829.

OFR is currently funded to employ the following positions:

- 1 Fire Chief/Director of Emergency Management
- 2 Deputy Chiefs
- 1 Full-time Administrative Assistant
- 1 Temporary Casual Administrative Assistant
- 1 Emergency Management Coordinator (Reports to Chief, part of Corporate Services)
- 8 Career Captains (+1 acting Captain developing Standard Operating Guidelines (SOGs))
- 28 Career Firefighters
- 8 Community Firefighters

Note: *OFR staffing levels of career and community firefighters vary given the recruitment and retention challenges.*

OFR currently maintains a minimum duty strength of six firefighters (two captains and four firefighters) between the two fire stations. The preferred staffing level is to have eight firefighters (two captains and six firefighters) on shift. With a total staff complement of 36 firefighters and the lack of a consistent number of community firefighters available, off-duty firefighters on overtime call-in are utilized to backfill the minimum duty strength vacancies to maintain six on duty 24/7 basis.

It must be noted that in our analysis, OFR has the lowest staffing of the comparative communities surveyed with a composite staffing model. Combined with the ineffective community firefighter program, this results in response system capabilities challenges and the ability to assemble an effective response force. This emphasizes the need for an enhanced emergency response capability. The OFR full-time staffing complement needs to be increased as necessary to sustain the approved minimum staffing levels at each of the two OFR fire stations. Current community growth projections, risk factors, and increasing management demands associated with maintaining a fire service will require additional operational and administrative staff capacity.

Summary of Recommendations

The following recommendations are drawn from findings presented throughout the report. A timeframe within 1 – 120 months (1 – 10 years) 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 time and will therefore not pose significant additional costs to the community. Other recommendations regarding staffing, equipment and infrastructure may have associated costs. Costs are rough order of magnitude estimates only and will require further refinement. 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.

Recommendation #1: Create a formal planning and development policy that includes Okotoks Fire & Rescue in the sub-division, land use and development planning processes.

Reference: Section 2.5 Community Planning and Development, Pg. 11

Recommendation #2: Continue to maintain response protocols and pre-incident training for dangerous goods including coordination with mutual aid partners.

Reference: Section 2.9.5 Dangerous Goods Response, Pg. 24

Recommendation #3: Initiate a regional administrative process with the Alberta Agriculture & Irrigation and Alberta Forestry & Parks Ministries to review the wildfire risk designation with the view to obtain Provincial grant funding for risk reduction strategies.

Reference: Section 2.9.6 Wildland Urban Interface Fires, Pg. 25

Recommendation #4: Create a new Administrative Officer position assigned to the Fire Chief.

Reference: Section3.2.4 OFR Non-Administrative Positions, Pg. 35

Recommendation #5: Move to phase out the community firefighter program and transition to a full-time career model.

Reference: Section 3.2.4.1 OFR Community Firefighter Program, Pg. 37

Recommendation #6: Increase the OFR full-time staffing complement to 40.

Reference: Section 3.2.5 Staffing Ratio, Pg. 39

Recommendation #7: Review and update as necessary all OFR job descriptions.

Reference: Section 3.2.5 Staffing Ratio, Pg. 39

Recommendation #8: Establish a full-time Training Officer position to oversee and coordinate the training requirements for OFR.

Reference: Section 3.4 Training, Pg. 44

Recommendation #9: Develop, implement, and document a policy-driven apparatus driver/operator program tailored to address each type of apparatus utilized by OFR.

Reference: Section 3.4 Training, Pg. 44

Recommendation #10: Develop a subcommittee of the Town of Okotoks Corporate Health and Safety Committee for OFR that will allow for effective participation from OFR staff.

Reference: Section 3.5 Health and Wellness, Pg. 47

Recommendation #11: Establish a Standards of Cover document that details Council approved core services, standards, and performance levels.

Reference: Section 3.8 Core Services, Pg. 50

Recommendation #12: Determine the appropriate level of specialized rescue training that aligns with Council-approved level of service.

Reference: Section 3.8.6 Technical Rescue Services, Pg. 54

Recommendation #13: Establish a full-time Community Safety Officer that provides program oversite for the fire prevention inspections, investigations, and public education programs.

Reference: Section 3.8.7.1 Fire Code Inspection Services, Pg.56

Recommendation #14: Establish a formalized pre-emergency plan inventory program utilizing the principals of NFPA 1620: Standard for Pre-incident Planning.

Reference: Section 3.8.8 Pre-Emergency Planning, Pg. 58

Recommendation #15: Establish a mutually agreed service delivery agreement that includes performance expectations, processes, and quality assurance measures to be provided by *FRESC.*

Reference: Section 3.8.10 911 and Fire Dispatch, Pg. 59

Recommendation #16: OFR establish an on-going communication process with FRESC to ensure proper internal measures are taken to align and take full advantage of enhancements available with the transition to NG911.

Reference: Section 3.8.10 911 and Fire Dispatch, Pg. 59

Recommendation #17: Review and update as necessary all Town of Okotoks intermunicipal agreements affecting Okotoks Fire and Rescue.

Reference: Section 3.10 Mutual Aid and Other Service Agreements, Pg. 62

Recommendation #18: Develop a fire suppression water delivery plan for response zones without available fire hydrants that ensure an uninterrupted water supply.

Reference: Section 3.11.2 Apparatus and Light Duty Vehicles, Pg. 82

Recommendation #19: Review all apparatus for functionality and reliability, including maintenance records, to ensure all apparatus are operating at peak performance.

Reference: Section 3.11.2.3 Fire Apparatus Design and Procurement, Pg. 86

Recommendation #20: Evaluate the feasibility of developing a workable hybrid vehicle repair, testing and repair model that is efficient and effective for the unique needs of OFR.

Reference: Section 3.11.2.4 Fire Apparatus Maintenance and Repair, Pg. 87

Recommendation #21: Conduct annual condition and suitability assessments of each apparatus and light vehicle including watercraft and amend capital asset replacement plan as necessary.

Reference: Section 3.11.2.5 Fire Apparatus Replacement and Dispersal, Pg. 89

Recommendation #22: Revive the pre-covid process of purchasing an appropriate rehab/decontamination unit by confirming unit specifications and re-submitting an updated capital request.

Reference: Section 3.15 Rehabilitation and Decontamination, Pg. 97

Recommendation #23: OFR continue with a two-station response structure and ensure that staffing levels are appropriate to maintain a minimum of eight firefighters on duty 24/7 to meet the municipalities current needs and circumstances related to risks identified.

Reference: Section 4.2.1 Current State, Pg. 110

Recommendation #24: OFR should increase the on-duty staffing to 12 firefighters and continue to utilize the on-call command officer to meet the effective response force of 13 firefighters on the initial response to moderate-risk events.

Reference: Section 4.2.2.2 Addressing Critical Tasking and Effective Response Force (ERF), Pg. 114

Recommendation #25: OFR investigate establishing or improving fire protection agreements, including automatic aid and mutual aid agreements with neighbouring fire services, and ensuring appropriate call-back provisions to ensure adequate resources are available for low frequency higher risk incidents.

Reference: Section 4.2.2.3 Addressing High-Risk, Low Frequency Events, Pg. 115

Recommendation #26: Identify alarm handling process improvement opportunities and benchmarks. Formalize the pre-alerting of the appropriate fire station once the location and card type are known and document the timestamp that the fire department was notified.

Reference: Section 4.4.1 Alarm Handling Performance, Pg. 132

Recommendation #27: Explore opportunities to improve, monitor and record assembly times, particularly for fire-related and other high priority incidents.

Reference: Section 4.4.2 Assembly Time Performance, Pg. 136

Recommendation #28: 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 4.4.3 Travel Time Performance, Pg. 137

Recommendation #29: Monitor future development and pressures on response time and examine opportunities for improvement.

Reference: Section 4.5 Response Time Mapping Analysis, Pg. 141

Recommendation #30: Complete a critical task analysis as part of the standards of cover response policy.

Reference: Section 4.7 Critical Task Analysis, Pg. 149

Recommendation #31a: Develop key performance metrics for audience-specific performance dashboards such as forefront-line staff, leadership, and governance.

Reference: Section 4.8 Measuring, Managing and Reporting Performance, Pg. 153

Recommendation #31b: Continually monitor the incident data in the records management system with a specific focus on complex, multi-station incidents to ensure accuracy of apparatus times and staffing numbers.

Reference: Section 4.8 Measuring, Managing and Reporting Performance, Pg. 153

Conclusion

This Fire Services Master Plan is intended to assist the Town of Okotoks and Okotoks Fire & Rescue (OFR) in evaluating the current service delivery model and develop a strategy to inform future investments in fire, rescue, and emergency services. The plan involved a comprehensive analysis of all key elements of service delivery. The analysis included a review of the operational and administrative aspects of the OFR, community profile and risks, staffing, core services and program delivery, training, recruitment and retention, facilities, and major equipment.

Further, OFR response data was assessed with a focus on the current performance, capabilities, and alignment with both existing and projected risks and levels of demand. There are several observations and recommendations provided in this master plan to improve operational effectiveness and efficiencies. Key among the 31 Observations and 32 Recommendations is:

- Establish a regulation or bylaw for all new developments that enforces compliance with the NBC-AB19's limiting distance and fire department response requirements.
- Establish the following three new OFR positions, Administrative Officer, Training Officer, and Community Safety Officer.
- Determine the optimal operational staffing level to sustain the core service performance expectations.
- Phase out the community firefighter program.
- Increase the OFR full-time staffing complement to 60 firefighters
- Establish a Standards of Cover document that details Council approved core services, standards, and performance levels.
- Determine the appropriate level of specialized rescue training that aligns with the community risk assessment.
- Develop a fire suppression water delivery plan for response zones without available fire hydrants that ensure an uninterrupted water supply.
- Establish a regular communication process between OFR and FRESC dispatch Centre and undertake the transition to NG911.
- Identify alarm handling process improvement opportunities and benchmarks.
- Formalize the pre-alerting of the appropriate fire station once the location and card type are known and document the timestamp that the fire department was notified.
- Monitor travel time as a key contributor to overall response time and investigate future opportunities to reduce travel time such as traffic light pre-emption, relocating or adding additional fire stations, or roadway design opportunities as development expands.

Although each recommendation has a corresponding timeframe, it is important to note this Fire and Rescue Services Master 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 OFR to mitigate and manage community risks, monitor response capabilities and performance amidst anticipated community growth, and maintain excellent community relationships and value for money.

It is important to note that our interactions with the staff revealed a highly professional and dedicated organization that is committed to providing the best possible service to the citizens of the Town of Okotoks.

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. Efficiency refers to optimizing the use of available resources – whether it is time, money, or effort. The notion of efficiency in service delivery is often described as 'doing more for less.'

Elected officials, CAOs, 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.'*

1.2 Goals and Objectives

The goal of this project is to develop a Fire and Rescue Services Master Plan (FRSMP) by conducting a comprehensive community risk assessment and a fire services review and produce a long-term strategic plan that spans up to 10 years. The FRSMP provides 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 FRSMP 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 has also investigated the 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 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 project has determined options towards an optimum service delivery model and serves as a blueprint for the community to be more effective and efficient in the delivery of fire and emergency services.

1.3 Project Scope

The Fire and Rescue Services Master Plan will consider and achieve the following benefits:

- Solutions for risks that require immediate mitigation
- Solutions for any identified risks, gaps, and vulnerabilities
- Opportunities to serve unmet needs
- Metrics for measuring fire service performance
- Enhanced firefighter safety
- Enhanced cost control and containment
- Increased operational efficiency and effectiveness

The following items were also completed to satisfy the requirements of the Fire and Rescue Services Master Plan:

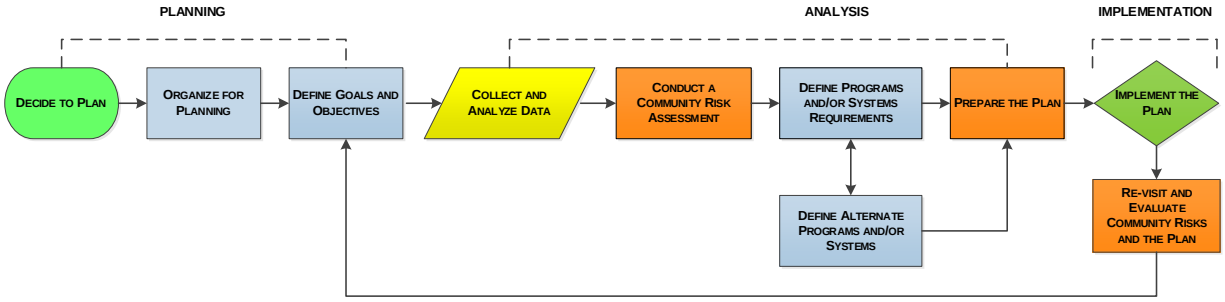
- Evaluated the existing and future service delivery model and projected needs based on current and predicted community growth including the 1,950 hectares (4,900 acres) annexed land from Foothills County.
- Assessed OFR capital land/facility/apparatus/equipment needs and strategies for addressing such needs taking into consideration the Okotoks Strategic Plan (2022-2025), Okotoks Community Vision and future growth and development models.
- Looked at areas of the community that may currently be experiencing accelerated growth, and where future growth (buildings and population) will impact fire & rescue services.
- Compared industry standard leading practices such as National Fire Protection Association (NFPA), Fire Underwriters, High Intensity Residential Fires, to the processes used to generate the model and Master Plan.
- Evaluated locations and growth of current and future fire infrastructure requirements such as but not limited to stations/apparatus/staffing need to be addressed with recommendations that will include industry leading practices and response standards, insurance and fire/building code implications and community expectations.

1.4 Fire Services Master Plan Process

The following diagram illustrates the process used to complete this FRSMP. The FRSMP 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 FRSMP 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, transportation infrastructure of the municipality and the various response zones OFR. Visiting the two stations provided an opportunity to conduct a general condition and operational functionality assessment. This tour also provided the opportunity to meet with various OFR staff and discuss their respective interests regarding the FRSMP development.

1.5.2 Targeted Interviews

Targeted interviews were part of the data and information collection process. Participants were asked questions related to their areas of purview and expertise. An interview guide was used to conduct the interviews. The interview itself was used to promote an open discussion about the community, risks, general concerns related to the community and municipal operations.

Table 1: Targeted Interview List

No.	Name	Job Title
1	Elaine Vincent	Chief Administrative Officer
2	Trevor Brice	Fire Chief, Director of Emergency Management
3	Dave Hodgins	Deputy Chief
4	Garth Misura	Emergency Management Coordinator
5	Colin Sager	Deputy Fire Chief Support Services
6	Adam McInnis	Platoon A Captain
7	Ryan Chigol	Platoon A Captain
8	Greg Koski	Platoon B Captain
9	Brux Hocking	Platoon B Captain
10	Neal Rowan	Platoon C Captain
11	Peter Lappin	Platoon D Captain
12	Travis Wray	IAFF Union President, Local 4829
13	Angela Whitney	Director Protective & Corporate Services
14	Ralph Ettenauer	Corporate Finance
15	Peter McDowell	Transportation, Fleet, Facilities
16	James Cameron	Community Development & Engineering
17	Jeff Green	Community Growth, Investment & Sustainability
18	Vikram Kukami	Municipal Enforcement
19	Jeremy Huet	Operations Director

1.5.3 Online Firefighter Survey

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

Invitations to participate in the survey were emailed to 36 potential participants; 20 (56%) participated in the survey. Of all survey respondents, 45% felt that the community received adequate fire protection, while 30% of respondents did not feel that fire protection was adequate, and the remaining respondents were undecided. All participants strongly agreed that the demand for fire and emergency services would increase in the future. Additionally, most respondents (70%) expressed a concern that OFR was not currently adequately staffed; however, this was not perceived as due to the rate of turnover. All respondents agreed that the rate of turnover was low and 40% agreed that the current recruiting program was effective, while 45% disagreed. Respondents were divided on whether general training was adequate (35% agreed and 35% disagreed), however most felt that the level of live-fire, specialty and leadership training could be improved.

When asked about resources and equipment, 35% felt that the fire service did not have adequate small equipment (SCBA, light duty vehicles and consumables), while 35% disagreed. Additionally, 45% felt that the current fleet of fire apparatus did not provide the capacity needed, while 25% felt the fleet was adequate. Most (55%) felt the current fire stations are functional and meet operational demand, however 55% also agreed that they were not strategically located for adequate coverage. Opinions were generally mixed on whether the fire service has kept pace with leading technology in records management, mobile CAD systems etc. More than half 55% of respondents expressed dissatisfaction with pre-alerting and alerting systems.

Respondents were asked, what the top five perceived risks are to the community, and reported as below:

1. Inadequate staffing levels
2. High density housing
3. Lack of specialized training (rescue, hazmat)
4. Train derailment
5. Multiple calls at once

Overall, respondents had a very positive outlook towards the service and leadership. It was noted that the Chief has made, and continues to make improvements to the service, and members were grateful for the work that has been done and are hopeful for future changes to come.

See Appendix D, for online survey results

1.5.4 Municipal Comparative Analysis

An industry peer comparative analysis[3] of OFR was conducted as a method of benchmarking the performance of departments to similar municipalities. The following participants in our analysis include:

- Airdrie Fire Department
- Cochrane Fire Department
- City of Leduc Fire Services
- Lloydminster Fire Services
- Spruce Grove Fire Services
- City of Grande Prairie Fire Department

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.

1.6 Applicable Standards, References and Legislation

- 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
- Alberta Building and Fire Codes, 2019
- Commission on Fire Accreditation International
- Canadian Standards Association (CSA)
- Fire Underwriters Survey (FUS)
- National Fire Protection Association (NFPA)
- Underwriters Laboratories (UL/ULC)

[3] *Please see Section 3.17, Municipal Comparative Analysis, Page 98*

1.7 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.
- Municipal emergency management plans

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

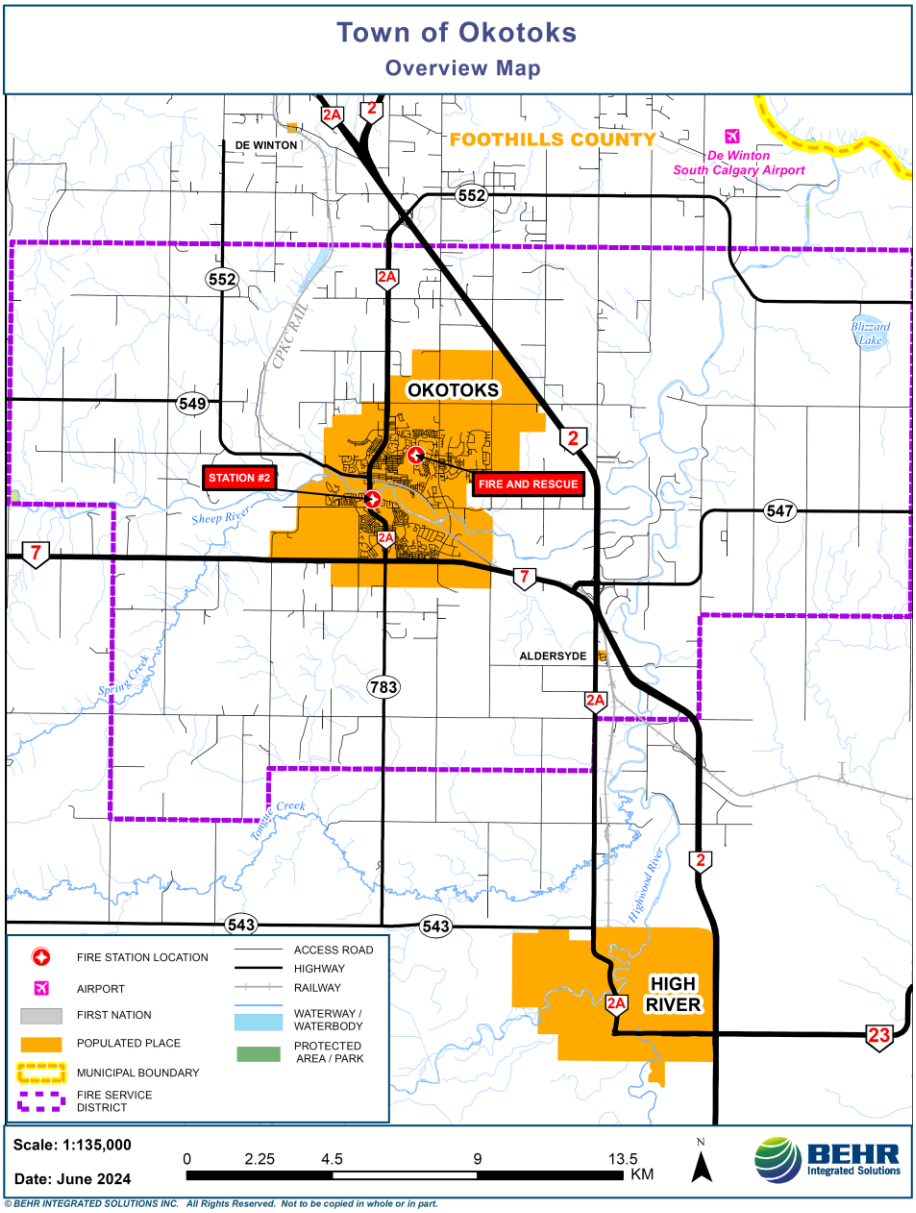
SECTION 2
COMMUNITY PROFILE AND RISK OVERVIEW

2.1 Community Overview

The Town of Okotoks (Okotoks) is a municipality in southern Alberta, situated on the Sheep River west of Alberta Highway #2 at the junction of Alberta Highways #2A and #7. It is accessed by Alberta Secondary Highways #549 and #783. The Town is transected from northwest to southeast by the Macleod Sub-Division line of the Canadian Pacific Kansas City Southern railroad.

Okotoks is approximately 25 km south of the City of Calgary city limits in both the Foothills and Rocky View Districts. It is located within the traditional area of Treaty 7 as well as in the Battle River Territory, of the Métis Nation of Alberta. Okotoks serves as a service and supply centre for residents and the surrounding area.

Map 1: Town of Okotoks Overview



Urban neighbours include the Town of Diamond Valley (20 km west along Highway #7), and the Town of High River (20 km south along Highway #2A.

2.2 Population and Economic Drivers

The 2021 Canada Census indicates the Town of Okotoks had a population of 30,405[4] (a 4.8% increase from the 2016 census), with its residents living in 10,750 total private dwelling units. The Town of Okotoks is the second largest Town in Alberta by population. The 2024 population is estimated at 37,550. With a land area of 38.55 km^2, the Town has a current population density of 974/km^2.

Town officials continually strive for a balance between market demand for growth and the capacity of infrastructure and resources to meet the demands. One important infrastructure consideration is the limitation of available water supplies.

Since the establishment of Okotoks as a community, farming and ranching, oil, and gas industry, along with lumber and brick production in earlier days, have been common regional economic activities. The Town's significant growth in the past 50 years can largely be attributed to its development as a 'bedroom' community to Calgary. People wanting to maximize their house purchasing power and willing to commute to and from Calgary for work, have chosen Okotoks as their home. As such, many Okotoks residents commute to Calgary for employment, entertainment, and post-secondary education. Managing this rapid growth while trying to retain the "small town feel" as Okotoks grew into Alberta's second most populous town and 14th largest municipality[5],comes with all the concerns and challenges faced by a large and growing community.

The Town has explored various ways to manage growth over the years, and as previously identified, the biggest restriction on expansion is the limitation of available water supply. The anticipated delivery of a regional supplemental water solution in 2025 in conjunction with Foothills County is a current focus of development. This will be a critical piece of infrastructure as the Province of Alberta's Environment Minister recently requested all municipalities prepare for the potential of reduced water supplies during the anticipated drought for 2024 and 2025.

[4] *Government of Canada, Statistics Canada. "This Product Presents Information from the Census of Population for Various Levels of Geography. Data Are from the 2021 Census of Population and Are Available According to https://worldpopulationreview.com/canadian-cities/okotoks-population*

[5] *"List of Municipalities in Alberta." Wikipedia, December 21, 2023. Retrieved from https://en.wikipedia.org/wiki/List_of_municipalities_in_Alberta#List_of_urban_municipalities & https://en.wikipedia.org/wiki/List_of_specialized_municipalities_in_Alberta#List*

Okotoks is a member of the Calgary Metropolitan Region Board[6], designated by Alberta Municipal Affairs to coordinate and manage growth, density, and land use in the region. In addition, the Town is located within the South Saskatchewan Land Use Framework Region[7] in southern Alberta. One of seven land-use regions in the province, responsible for the development and implementation of a regional plan, complementing the planning efforts of member municipalities to coordinate future growth. The oversight of planning in the regions is managed by Alberta Environment and Protected Areas corresponding roughly to major watersheds while following municipal boundaries.

2.3 Growth Projections

With a 50-year history of continuous, annual population growth, the anticipated increase in provincial and national populations, along with the capacity expected to be provided by the new regional supplemental water solution[8], the Municipal Development Plan of the Town of Okotoks projects the Town's population to more than double to 75,000[9] people by 2080.

2.4 Community Demographics

Stats Canada 2021 Federal Census[10] indicates 85.2% of Okotoks's population is under 65 years of age and 21.6% are under 15 years old. The average resident could be described as:

- 38.4 years old
- Married with two children
- Having an after-tax household income of $110,900
- English speaking
- Canadian born
- Living in a single-family dwelling
- Owning their own home
- Employed full-time within the Calgary region
- Commuting between 15 and 45 minutes each way to work
- Holding a post-secondary certificate/diploma and/or degree

Additional detail can be found in the accompanying Community Risk Assessment completed by Behr Integrated Solutions to complement this Fire Service Master Planning Process.

---

[6] *Retrieved from Calgary Metro Regional Board Website https://www.calgarymetroregion.ca/*

[7] *"South Saskatchewan Region." Pages - default. Accessed January 22, 2024.*
Retrieved from: https://landuse.alberta.ca/RegionalPlans/SouthSaskatchewanRegion/Pages/default.aspx

[8] *"Town of Okotoks and Foothills County Formalize Regional Supplemental Water Supply Solution." Town of Okotoks and Foothills County formalize regional supplemental water supply solution | The Town of Okotoks, September 9, 2020. Retrieved from: https://www.okotoks.ca/your-government/newsroom/news/town-okotoks-and-foothills-county-formalize-regional-supplemental*

[9] *https://www.okotoks.ca/sites/default/files/2023-02/Okotoks%20MDP.pdf*

[10] *Government of Canada, Statistics Canada. "This Profile Presents Information from the 2021 Census of Population for Various Levels of Geography, Including Provinces and Territories, Census Metropolitan Areas, Communities and Census Tracts. Data Are from the 2021 Census of Population February 9, 2022. Retrieved from https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?Lang=E&SearchText=Okotoks&DGUIDlist=2021A00054806012&GENDERlist=1,2,3&STATISTIClist=1,4&HEADERlist=0*

2.5 Community Planning and Development

Development within the Town of Okotoks is governed by the Land Use Bylaw 17-21[11], consolidated in June 2023. Development plans for the Town are laid out in the Municipal Development Plan (MDP) which is Bylaw 02-21, amended by Bylaw 19-22[11]. The Land Use Bylaw provides a regulatory process to implement the principles and policies outlined in the MDP.

The MDP speaks of the need to "manage growth to create a complete, compact and sustainable community" as the Town anticipates future growth. Areas of concern noted in the MDP include increasing density, improving the efficiency of transportation methods, and protecting or improving the environmental sustainability of the Town and its operations.

Land use bylaws and MDPs are regularly amended and updated to manage the type, location, and direction of development. Traditionally in Alberta, this municipal planning process has not formally involved the fire department in the pre-evaluation of potential impacts which developments would have on the fire service to meet service level expectations during emergency events. Involvement of the fire department at the initial municipal planning process would provide insights into the needs for fire suppression and rescue services and identify strategies to manage and/or mitigate safety concerns and service impediments. This involvement appears to be evolving within the Town of Okotoks in recent times with an increased awareness of how development decisions impact fire department infrastructure, equipment needs, and operations.

Observation #1: Communication and collaboration between municipal departments involved with planning and development has increased in recent years. Creating a formal policy would enhance collaboration and ensure that OFR is involved in community planning and development to determine impacts on service capabilities. This would include reviewing sub-division, land use, and development proposals.

Recommendation #1: Create a formal planning and development policy that includes Okotoks Fire & Rescue in the sub-division, land use and development planning processes.

Suggested completion: *12 - 24 months*

Cost: *Neutral*

Resource: *Staff time, OFR Operating budget*

[11] *"Town Bylaws." The Town of Okotoks, November 9, 2023. https://www.okotoks.ca/your-government/your-Council/town-bylaws.*
Retrieved from: https://www.okotoks.ca/your-government/your-Council/town-bylaws

> ***Rationale:*** *Establishing a policy ensures OFR is consistently and directly involved with reviewing sub-division, land use and development proposals to determine potential impacts on OFR effectiveness to provide core services to residents. This would align the level of fire protection services with growth and development.*

2.6 Community Risk Assessment

Every municipality has unique characteristics and challenges contributing to risk. Management of risk by the municipality can involve:

- Accepting the risk
- Transferring the risk
- Insuring against damages
- Investing in risk prevention and mitigation

Local governments typically employ a combination of these approaches. In general, the risk management strategies of a community are relative to the municipality's fiscal capacity, loss history, geography, demographics, economic activity, operational posture, strategic goals, fixed assets, and critical infrastructure, as well as overall service delivery levels.

The Community Risk Assessment (CRA) attached as Appendix G provides a detailed assessment for the Town of Okotoks of risks associated with fire and hazards, specifically focusing on the high-priority risks that would be managed with a fire department response.

High-priority risks are those associated with significant consequences or those which have moderate consequences but have a greater likelihood of occurrence. The overall purpose of conducting a risk assessment is to establish immediate, short-term, and long-range strategies for the management of these types of community risks.

Conducting a risk assessment is the first step towards establishing strategic plans to manage community risks based on fire department response capabilities and capacities. The results are used to assist the municipality in making informed decisions regarding the allocation of limited fire prevention and fire response resources and the evaluation of future operations and infrastructure planning. The following table is a summary of the CRA key findings:

Table 2: Community Risk Assessment (CRA) summary of key findings

No.	Key Finding
Geographic Profile	
1	There are currently no major projects scheduled for bridge and/or culvert repairs.
2	Grade level rail crossings have the potential to create a physical barrier to connectivity to the roadway network, causing delays in response time. There are six at-grade rail crossings throughout the town.
Building Stock Profile	
3	Extensive residential and mixed-use development in the southeast and northern portion of the town could increase fire risk and service demands in these areas.
4	There are 15 identified heritage buildings (not including private residences) within the town.
Demographic Profile	
5	The 2021 Census data indicates that children aged 14 and under, represent 21.62% of the town's total population. This represents an important demographic for the purposes of public education. There is value in targeting public education and prevention programs to this demographic.
6	Areas around Sheep River and in the northern portion of town consist of 13 – 49.5% of seniors. Seniors are at an increased risk of fire fatality and medical calls.
7	The greatest concentration of population aged 0-14 years is concentrated in densely populated neighbourhoods close to schools and amenities. This age group is best targeted for fire prevention education.
8	The gender distribution in Okotoks is roughly equal in all age groups. It does not appear that gender based public education would have a positive influence on reducing fire related incidents, fatalities, or injuries.
9	Okotoks has a comparable labour force participation rate to that of the province, which suggests there is not an increased fire risk based on these statistics.
10	When comparing educational attainment and median total income per household between the province and Okotoks, it appears that Okotoks may have a slightly lower fire risk.
11	When comparing the socio-economic factors, the statistics may suggest that there is a lower fire risk to the town compared to the province.
12	When comparing housing tenure for the town of Okotoks to that of the Province, Okotoks appears to have a lower fire risk.
13	The low proportion of immigrants in the area, and statistics regarding spoken languages, suggests that there are no concerns with cultural and language barriers in understanding fire safety messages, warnings, practices etc.

No.	Key Finding
Demographic Profile	
14	Approximately 10% of the population of Okotoks falls into the age range typical of post-secondary students. This could indicate an uncaptured statistic for commuters and unregistered student housing, both of which pose an increased risk in call volume due to MVI and fire statistics.
15	The town's commuter population presents a factor that may impact traffic congestion, and the potential occurrence of motor vehicle incidents within the towns on major routes.
Public Safety Response Profile	
16	The Town of Okotoks is well supported by several public safety agencies within the community.
17	The Town of Okotoks has formal mutual aid and cost sharing agreements in place with several agencies for fire and emergency services support.
Community Services Profile	
18	This list of community services demonstrates that the town is very well supported in the event of a major or serious emergency.
Economic Profile	
19	The town has identified top employers that contribute to the economic vitality of the community. The largest of these are education and service (retail, grocer and eating establishments) sectors.
20	Disruptions to the retail, construction, health, and educational services could impact more than 50% of the labour force. Incidents having a long-term impact on these sectors (such as a pandemic, government disruptions etc.) could have negative consequences and result in secondary incidents i.e., medical and distress calls.
Past Loss and Event History	
21	Between January 1, 2018, and December 31, 2022, Uthe number of fires within the town remains consistent year over year, however the total loss varies significantly in some years.
22	The town has a significantly lower number of exposure fires when compared to the province, likely attributed to lower density residential areas.
23	The town has a significantly high number of fires with reportedly unknown sources of ignition.
24	Provincial data suggests that the presence and proper maintenance of smoke alarms does lower the rate of fire fatalities and injuries with the exception for those under the influence of drugs and alcohol and who have mental challenges. OFR does not have this data readily available for analysis.
25	There is very little fluctuation in call volume through the week.
26	Between January 1, 2018, and December 31, 2022, most responses were attributed to medical co-response calls (51.99%) and alarm no fire calls (25.18%)

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. Some general examples of challenges which may impact community risk include:

- Fire/rescue service delivery model
- Response capacity and capability
- Population and demographics
- Population growth rate
- Number and types of industry
- Economy
- Rate of development
- Transportation corridor types
- Topography
- Weather
- Historical response data

2.6.2 Risk Management

All communities require a process to identify, and actively manage high-priority risks. The focus of this Master Plan, and the accompanying Community Risk Assessment, is to identify and discuss specific risks, and unique community characteristics that contribute to its overall risk. These risks are typically managed through planning requirements, code provisions, building design, fire prevention or fire department response. Image 1 describes the risk management cycle.

Image 1: Risk Management Process

The first step in the risk management process includes identifying and assessing the probability, and potential consequences, of specific risks. The next step is to identify the key risks which are then evaluated against the current prevention and response strategies to identify possible current and anticipated service gaps. The third step in this cycle includes adjusting building design/location, fire prevention and response service levels to manage the resources necessary to pre-emptively mitigate or respond as determined by the approved service levels set by the Municipal Council. The final step in the cycle is to consistently measure and report those results to key policymakers. This cycle should be repeated periodically, ideally annually, to address changes in the municipality and its risk profile, and from which thoughtful and informed decisions regarding strategies utilized to manage the impacts of those changes can be made.

In Alberta, local governments, in the absence of any mandatory legislative requirement, are generally expected to provide fire and rescue response services for their citizens. Elected officials are the Authority Having Jurisdiction (AHJ) who ultimately determine, through bylaws, policies and budgets, the level of service required to manage and mitigate fire and rescue risks to an acceptable level within their jurisdiction. The challenge for elected officials lies in determining an optimal balance between investing in adequate emergency services and the acceptance of a certain level of risk.

2.7 Risk Evaluation vs. Service Levels

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

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

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

- Life safety impact: Life safety risk for victims and responding emergency personnel are the highest order of consequence when considering the risk associated with specific event types. Events with a high likelihood of injury/death occurring or even a moderate probability of occurring, require close examination to ensure the availability of adequate resources required to safely rescue or protect the lives of residents. Incidents that risk life safety include motor vehicle incidents, extreme weather, flooding, fire, release of hazardous materials, medical emergencies, and all types of rescue situations.
- Economic impact: Events with a high negative impact on the local economy are often 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. Included within the consideration of economic impact is an assessment of the possible long-term effects on the concept of "community" including possible psycho-social concerns.
- 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 of the Town and therefore must be considered.

Social and cultural impacts experienced with the loss of historic buildings, recreation facilities or non-critical community infrastructure, are usually 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 appropriate risk management strategies. Where a fire department response is determined to be the most appropriate management strategy, the appropriate services and service levels need to be established to safely manage the risks. Elected officials are responsible for determining which services are delivered and setting the service level goals that guide service delivery. The service level goals determine the necessary provision, concentration and distribution of fire prevention, public education, and emergency response resources to safely manage the identified community risks.

Distribution *refers to the number of fixed resources, such as fire stations, and where they are located within the community. Distribution varies depending on factors related to the number of incidents and types of calls for service in the community. The physical location or distribution of fire suppression resources is often not aligned with the spatial distribution on a map. For optimal effectiveness, the location of fire stations needs to consider the plans for future growth, transportation infrastructure, any impediments (bridges, waterways, rail lines) and the relevant regulatory or policy decisions by government(s) regarding fire department coverage within specified time limits.*

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 arrival time of a secondary responding unit. Specialized response capabilities usually exist within larger fire service organizations with the personnel and resources to develop capacity and competency.*

Provision *speaks to the choices made, in these instances by municipal elected and administrative officials, as to whether they want to directly provide a fire department to serve the community, rely upon others to provide services through contract, or leave this to individual property owners. There is no legislative mandate in Alberta's Municipal Government Act or other statute for an urban municipality to provide fire services.*

The risk evaluation matrix (see Figure 2) can be divided into four levels of risk based on probability and consequence, each with specific implications for the concentration and distribution of resources. It is provided as a reference and context to quantify fire response risks in a municipality. Each quadrant of the risk matrix needs different response requirements.

Figure 2: Risk Evaluation Matrix

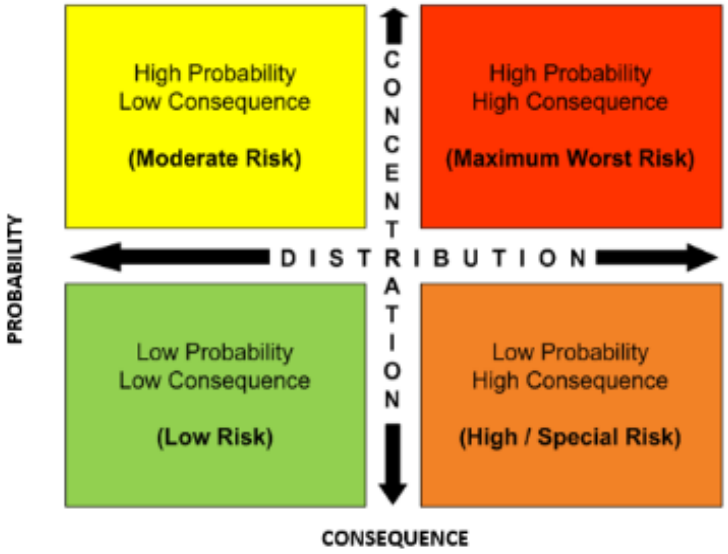


Table 3 offers an example of the categories and types of structures and general hazards commonly found in communities. As described above, these risks are categorized by considering the probability and consequence of the fire or hazard. This qualitative analysis is based on experience and expertise and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

It is critical to carefully plan and consider alternative solutions and innovations when managing risk. The ability of any municipality to increase the distribution of resources and add capacity to satisfy the desire to "do more", is ultimately finite, limited by what the taxpayers and community are willing to pay for in providing those services.

Spending significant time and resources to manage a risk that has low frequency/low consequences has limited impact and generates minimal improvement in community safety; whereas additional efforts and expenditures to mitigate high consequence and/or high frequency risks can have significant impacts and results. When planning for fire department response, the planning process includes a detailed review of the past, and the anticipation of future frequency of events based upon history and growth projections, and their potential consequence(s), so that any design, planning, prevention, education, and response efforts are focused on maximizing life safety and minimizing negative consequences for high-priority events.

Table 3: Sample Risk Inventory

Low Risk = Low Probability and Low Consequence

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

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

Moderate Risk = High Probability and Low Consequence

Most responses fall under this category. Moderate risks include:

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

High Risk = Low Probability and High Consequence

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

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

Maximum Risk = High Probability and High Consequence

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

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

2.8 Structural Fire Risk Analysis

This section briefly describes how the risk of structure fires can be evaluated and how to use this information to inform the distribution and concentration of limited fire department resources. A more in-depth analysis is provided within the accompanying Community Risk Assessment.

Analyzing structural fire risk begins by using or developing an exhaustive inventory of existing building stock and monitoring all changes to the inventory created by new construction, renovation, alteration, and demolition. This process starts at the building permit stage and should include municipality safety codes officers. This provides these professionals with an opportunity for advanced evaluation of the requirements of the National Building and Fire Codes of Canada (2019 Alberta Edition) which will assist in the compliant planning, design, construction, and operation phases of the building process. The permitting system is the ongoing input mechanism for the municipal building inventory.

The building inventory database becomes the foundation for assessing structural fire risk in the community. This inventory provides a count and description of all property types and occupancy classifications including single and multi-family residential, assembly (including schools, churches, restaurants, taverns, recreation centres, etc.), institutional (treatment, care, detention), service businesses (banks, medical offices), mercantile (commercial, retail), and high, medium, and low hazard industrial properties.

Fire departments work with the municipal planning and development department staff, and construction discipline Safety Codes Officers, to develop informed processes which monitor the addition of new buildings or significant changes to existing properties. The process should involve the fire department in the review of building plans to identify concerns and determine the risks that are presented by each property, as well as the necessary components of fire safety plans for construction and operation. This collaboration can also inform the development of fire response pre-plans to prepare fire responders for the specific hazards in high-risk structures.

It is typical for single-family detached homes to make up the largest percentage of property types within a community. As a result, fires in this type of moderate-risk structure are usually the most probable. However, the consequence of these types of fires is low relative to other residential properties, such as low, mid, and high-rise buildings. However, the use of lightweight manufactured floor joists and beams does create an additional hazard for occupants and firefighters during fire events. Unprotected lightweight floor joists in basements provide a further risk when a fire occurs in this area. Compromised floors may prevent entry into certain structures.

Table 4: Town of Okotoks Building Inventory by Property Type

Property Type	Count of Properties	% of Total Properties
Assembly (theatres, schools, hotels convention centres, public facilities with high occupancies etc.)	26	.23
Institutional (prisons, hospitals, care homes etc.)	1	.01
Residential - single family	8,444	75.87
Residential - multi-unit	2,220	19.95
Business and personal services	300	2.70
Mercantile		
Industrial	138	1.24
Total	11,129	100

2.9 Community Risk Analysis Overview

The following section provides an overview of the unique characteristics, hazards, and risks in the Town of Okotoks that impact the fire service response. This study is being completed in conjunction with a comprehensive CRA. This section provides additional context to assess fire department response capability by offering an assessment of some of the medium, high, and maximum risks identified in the consultation process and analysis of fire department response data. Specifically, the risk factors that have an impact of the OFR include:

- Community growth and anticipated additions and changes to building stock and types of construction.
- Municipal infrastructure
- Fire Department Response and Spatial Separation
- Transportation corridors including roads and railways
- Dangerous goods release
- Interface fires mixed with high winds and high temperatures
- Reliability and volume of firefighting water supply
- Other risks include natural events and weather-related emergencies.

2.9.1 Fire Department Response Demand

One of the challenges for OFR is the broad mix of occupancies within the Town. The structural inventory includes numerous locations that present multiple low/medium probability with high consequence risks including:

- Mixed and multi-residential structures including heritage buildings and "care" facilities
- Commercial
- Low, medium, and heavy hazard industrial
- Transportation-related facilities (light vehicle sales, service, and storage; trucking and rail – including dangerous goods on site)

The structural fire risks and other specific identified hazards within the Town should be analyzed and rated using the risk matrix methodology as part of a formal fire pre-planning process. The information obtained is essential with the development of the standards of response coverage policy.

2.9.2 Active Risk Reduction

There are additional strategies which can be undertaken to reduce the impact of fire on the Town of Okotoks. This is especially important with single and duplex-family dwellings that are not generally covered by fire inspection or pre-emergency planning activities. Automatically extinguishing or holding fires within the area or room of origin with automatic fire sprinklers can have a major impact on the effectiveness of OFR as the Town of Okotoks grows.

Fire sprinklers are required by the National Building Code: Alberta 2019 Edition[12] (NBC AB19), for several occupancies and do not apply to smaller buildings such as single and duplex-family residential structures. Municipalities have the authority to require residential fire sprinklers to comply with the requirements of the NBC-AB19, Limiting Distance and Fire Department Response". This is applicable for new residential developments that are beyond the 10 minutes in 90% of the fire department response. It should be noted that the installation of sprinkler systems does not negate the need for firefighters. Sprinklers will increase life safety, increase chances of escape, and keep the fire in check. However, it will require the fire service to confirm all occupants have escaped and fully suppress the fire.

[12] *National Building Code of Canada: Alberta 2019 Edition - National Building Code: Alberta 2019 Edition - NRC Publications Archive - Canada.ca*

For a municipality to consider utilizing the principles of this standard, station location and the distribution of firefighters and apparatus must be analyzed for optimum performance. Further the municipality must balance the community risks identified with the fiscal responsibility or realities of the Corporation. To achieve these standards, additional stations and/or relocation of existing stations need to be considered, and an increase of on-duty staffing or reliance on response agreements with neighbouring municipalities.

By adopting these principles, the town can consider their current risks and look at adding response resources as the new growth increases the demand on fire services. Adopting a long-term roll-out over a 20-year period allows for incremental increases to staff limiting the annual impact on the OFR operating budget.

2.9.3 Residential Sprinklers

It is possible for the Town to require both sprinkler protection for buildings outside the 10-minute zone but also to encourage or incentivize the installation of residential fire sprinklers in new houses. Single-family homes are the most prevalent occupancy and typically the location of most fires, the Town of Okotoks may wish to actively manage the future risks with the installation of residential fire sprinklers in new, and possibly existing homes.

This life saving fire protection has been proven to save lives and reduce property loss for many years. The Canadian Association of Fire Chiefs' white paper "Myth Busting and Team Building: A Win-Win Approach to Advancing Residential Fire Sprinklers in Canada[13]", describes some of the possible incentives and trade-offs that could be considered. The Home Fire Sprinkler Coalition Canada also provides information and educational resources for fire departments, elected officials, home builders and homeowners.

The use of development trade-offs and/or incentives, to facilitate residential sprinkler installation, can be utilised to "future-proof" new developments and reduce some of the potential demand for fire services while increasing the level of life safety for occupants and firefighters.

To ensure a sufficient volume and water pressure to serve a residential sprinkler system the industry strongly advocates that municipalities require water service pipes of 1 ½" nominal pipe size with a 1" water meter. Estimates suggest that requiring this water service pipe size would add $300 to $500 to each serviced lot for the increased fitting sizes on saddles, valves and other fittings but would ensure that owners could install residential sprinklers to protect themselves and reduce pressure on the fire service.

[13] *As retrieved from CAFC White Paper at: https://cdn.ymaws.com/cafc.ca/resource/resmgr/sprinklers/sprinkler-report/CAFC_2022_Sprinkler_Report_E.pdf*

2.9.4 Multiple Transportation Corridors

Dangerous goods and hazardous materials are transported daily in unknown quantities through the Town on roadways and rail. Although the probability is relatively low, and awareness and planning for such an event have been high for many years, an incident involving the release of hazardous materials in the Town of Okotoks could have devastating life safety, economic and environmental consequences.

There is a Dangerous Goods Bylaw (Bylaw 16-16) which designates routes, time frames and limitations for transportation of dangerous goods within the town. The bylaw is utilized by Okotoks Municipal Enforcement and the RCMP for compliance and OFR for response pre-planning.

A significant OFR response risk associated with these heavily travelled roadways, and with Alberta Highway 2 on the eastern border, is motor vehicle incidents (MVIs) as well as an increased probability for a collision involving many victims, or a mass casualty incident. MVIs are typically a moderate risk, low in consequence but relatively probable across the OFR's response zone. MVIs during the period 2018-2023 represent 9.35% of the OFR call volume.

While events involving multiple casualties are less frequent, these events are considered a maximum risk, as the consequences of these types of events are considerably greater than smaller MVIs and can overwhelm the fire, rescue, and EMS response resources of most communities. Events such as multiple casualties require the activation of mutual aid within the OFR demand zones

2.9.5 Dangerous Goods Response

Petroleum production within the general area, as well as storage and processing facilities, pipelines, chemical processes, transportation, storage, use of agricultural chemicals all increase the possibility of a dangerous goods release within the Town. Depending on the magnitude of the release and the type of risk an event involving the release of dangerous goods is categorized moderate risk with high consequences.

Given the possible types and quantities of dangerous goods being transported, the resources required to safely manage these events may exceed the required competencies and capacity of all but the largest fire departments in Alberta. As a result, fire departments from most municipalities typically provide an initial response to identify the issue, establish restrictions and initiate evacuations in conjunction with law enforcement as required. Significant releases usually require support from mutual aid partners, outside agencies, and professional response contractors, often under contract to the shipper or supplier, who maintain specialized competencies and equipment to completely control and manage the release.

OFR provides dangerous goods awareness and operations training in accordance with NFPA 470 "Hazardous Materials/Weapons of Mass Destruction Standard for Responders" and the included predecessor standards. This training is critical for the safety of first responders and their ability to protect the public.

Observation #2: Dangerous goods are transported by road and rail through Okotoks. Okotoks town has an extensive dangerous goods bylaw to prevent major spills in central parts of town. Incidents can still occur on major routes however, including Highway 2A over Sheep River. A major hazardous material release due to a collision near populated areas is assessed as a low probability, high consequence event that could result in a high to extreme life safety risk.

Recommendation #2: Continue to maintain response protocols and pre-incident training for dangerous goods including coordination with mutual aid partners.

Suggested completion: *12 - 72 months*

Cost: *Neutral*

Resource: *OFR Operating budget*

Rationale: *Continued coordination with emergency response agencies, and industry representatives is required to enhance the town's capability to mitigate a dangerous goods incident within the community or surrounding areas. This should include a predetermined network of industry and third-party agencies that can provide additional resources in the event of a major incident. Further periodic estimate of the volumes and types of dangerous goods transported through the response zones will inform future hazard identification and risk assessments (HIRA).*

2.9.6 Wildland Urban Interface Fires

The projected growth of Okotoks, combined with climate change, increases the risk potential for wildfires from the surrounding crop/brush lands and the river valley. Some of the most significant wildland fires in the area have occurred during winter and early spring due to a lack of snow cover and moisture.

Public education for urban and suburban residents about FireSmart principles through meetings, media, and demonstrations could be used to educate residents in implementing best practices to reduce the wildland interface risks.

Observation #3: There is a considerable risk of a grass fire in areas of urban interface, as identified in the Community Risk Assessment. The area surrounding the town is primarily agricultural, and growing development in natural areas increases the threat of a wildfire affecting the Town. Okotoks does however proactively take measures to protect areas with buildings adjacent to non-manicured public lands such as parks and open spaces.

There were multiple grass fires around Calgary and Okotoks in 2023 with no major losses reported. However, increased wildfires in recent years along with the limited resources will result in operational challenges during a busy wildfire season.

There are opportunities to formally support the FireSmart program for grass/cropland/brush situations within and around Okotoks. Provincial grants are available to assist municipalities in completing plans and implementing risk reduction strategies. During consultation it was identified that the province has not deemed Okotoks as being a high priority or high-risk area for wildfire risk reduction funding. Working with Foothills County and other local municipalities, this designation needs to be reviewed to substantiate the risk and possibly support Provincial grant funding. It is acknowledged that in 2020 Foothills County completed a northwest wildfire mitigation strategy analysis that did not include the Okotoks area.

Wildfire hazards and risks are assessed using wildfire incidence, wildfire behaviour potential, and wildland/urban interface hazard to quantify overall wildfire threat to developments and to determine priorities for FireSmart mitigation actions. Climate change and the proliferation of wildfires across North America emphasize the need to be proactive by examining risk potential on an annual basis.

Recommendation #3: Initiate a regional administrative process with the Alberta Agriculture & Irrigation and Alberta Forestry & Parks Ministries to review the wildfire risk designation with the view to obtain Provincial grant funding for risk reduction strategies.

Suggested completion: *12 - 24 months*

Cost: *Cost neutral*

Resource: *OFR staff*

Rationale: *A community grass/crop wildfire prevention plan, along with the implementation of FireSmart program principles will provide interface property owners (proximate to borders and green spaces) information and an opportunity to prevent the spread of grass/crop/brush wildfires into the Town. Contingent upon the Province's risk designation grant funding for reduction strategies may be available.*

2.9.7 Severe Weather Events

Okotoks may experience significant risks from severe weather events. The following severe weather events are determined to be at a high-risk potential:

- Blizzards
- Freezing Rain
- Extreme cold
- Floods (river/rainfall/runoff)
- Tornadoes and other wind events

Given Okotoks' topography and history, overland flooding events from the Sheep River system are potentially significant life and property safety events that can pose risk to the town's critical infrastructure.

Tornadoes, wind shear, plough wind, and microburst winds also may pose a considerable threat to life safety with increased consequences within Okotoks. High winds can cause significant property damage, and interruption to critical infrastructure including electrical power distribution, communications systems, and transportation corridors. These can be particularly problematic for the aviation facilities and operations within the town.

Extreme weather events in Alberta are often protracted and have a large regional impact. These events often require a regional multi-agency response coordinated by joint emergency operations centre staff. As a result, blizzards, freezing rain, floods, and high wind events can draw down the response capacity of all fire services. This is a significant challenge to sustain a multiple-day response. The OFR's response plans, and the Municipal Emergency Management Plan need to anticipate this limitation.

2.9.8 Airports

Airports present unique hazards associated with the movement of people and goods and the possibility of incidents or accidents involving one or more aircraft, hazardous materials, and fuel load. In 2020, the Transportation Safety Board of Canada (TSB) reported air accidents have decreased by up to 32% over the last decade, and air incidents have decreased 47% below the average. Unfortunately, accidents and incidents still occur, despite continual efforts to improve air travel safety.

The Okotoks Air Ranch Airport is located within the northeastern town limits, in a residential neighbourhood. The airport is operational every day from 07:00 to 23:00. The airport is home to a range of businesses, a UAV training facility, and a helicopter maintenance facility, as well as a fueling station. There is also a large, privately owned hangar which rents individual bays.

Between 2007 and 2019 there were nine incidents reported to the TSB involving aircraft from the Okotoks Air Ranch Airport, which resulted in three injuries and one fatality.

The Black Diamond/Cu Nim Airport is located outside the town's boundaries but within OFR response zone. There have been two reported incidents at the airport, one in 2019 and one in 2018, resulting in one fatality. Due to the proximity of the airport to the Town, a plane could potentially crash within the town limits, and depending on the location could result in mass casualties and the potential for OFR to respond for support. This would be a low probability but potentially of high consequence.

SECTION 3
DEPARTMENT PROFILE

3.1 Department Overview

Okotoks Fire & Rescue (OFR) has a proud history of serving Okotoks and continues to evolve in its service delivery to meet the increasing demands of a growing community. OFR is currently considered a composite fire service, relying primarily on career full-time firefighters, supported by a small complement of community part-time firefighters responding out of two fire stations within the town boundaries. Okotoks also maintains several mutual aid agreements with the District of Foothills No.31, the Town of Strathmore, and South-Central partners for emergency or fire related services.

While the transition of OFR from a volunteer to a career service continues, the anticipated growth in development and population within the town will pose a challenge to OFR to maintain the current level of service going forward. It is desirable to ensure current services and infrastructure are in step with future development. In the case of a fire service, the lead time necessary to have sufficient stations, staffing and equipment in place at the appropriate time validates the need to develop a master plan that is aligned with council priorities.

3.1.1 Community Vision, Mission, Core Values and Guiding Principles of the Town of Okotoks

Okotoks has developed Vision, Mission, Core Values, and Guiding Principals, which OFR adheres to.

The Town of Okotoks strives to create and nurture an environment in which people are able to pursue the fulfillment of their values, in harmony with the community.	**MISSION** Our Mission describes our purpose
A vibrant, resilient, and connected community that fosters the wellbeing of land and people; a community to call home.	**VISION** Our vision is what we aspire to be
A citizen focus, A committed Town team, A Regional Focus, Partnering for success, Transparency and accountability, financial responsibility, excellence and prosperity, respect for the planet, diversity, equity, inclusiveness, and accessibility. Innovation, collaboration, empowerment, passion, accountability, communication.	**VALUES** Our values are our guiding principles

3.2 Human Resources

Whether full-time (career), POC, or volunteer; a fire department's employees are its most *'valuable asset'*. Emergency services are often delivered under difficult and stressful circumstances, with little room for delay or error. Fire departments must be adequately resourced with staff, equipment, and training to be effective in delivering highly technical services to achieve service excellence based on the communities' risks and needs identified in the CRA, and service levels identified by Council. As a result, considerable effort is warranted to ensure 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, continuity, and effective communication with opportunities for staff development.

The Okotoks Human Resources (HR) partners with each of the municipality's departments, programs, and services to assist with achieving their human resources goals and objectives. Services provided include:

- Recruitment and selection
- Compensation and benefits
- WCB and illness
- Employee relations
- Performance management
- Employee wellness
- Contract implementation and interpretation

While developing this Fire Services Master Plan, staff demonstrated a commitment to this goal and consistently provided a high level of service to the municipality while maintaining the safety and health of the members.

3.2.1 Staffing Complement

OFR maintains an administrative structure supporting a combination of career full-time and community part-time firefighters to deliver emergency services, fire prevention and public education within Okotoks. The career firefighters, excluding the fire chief and two deputy fire chiefs, are represented by IAFF Local 4829.

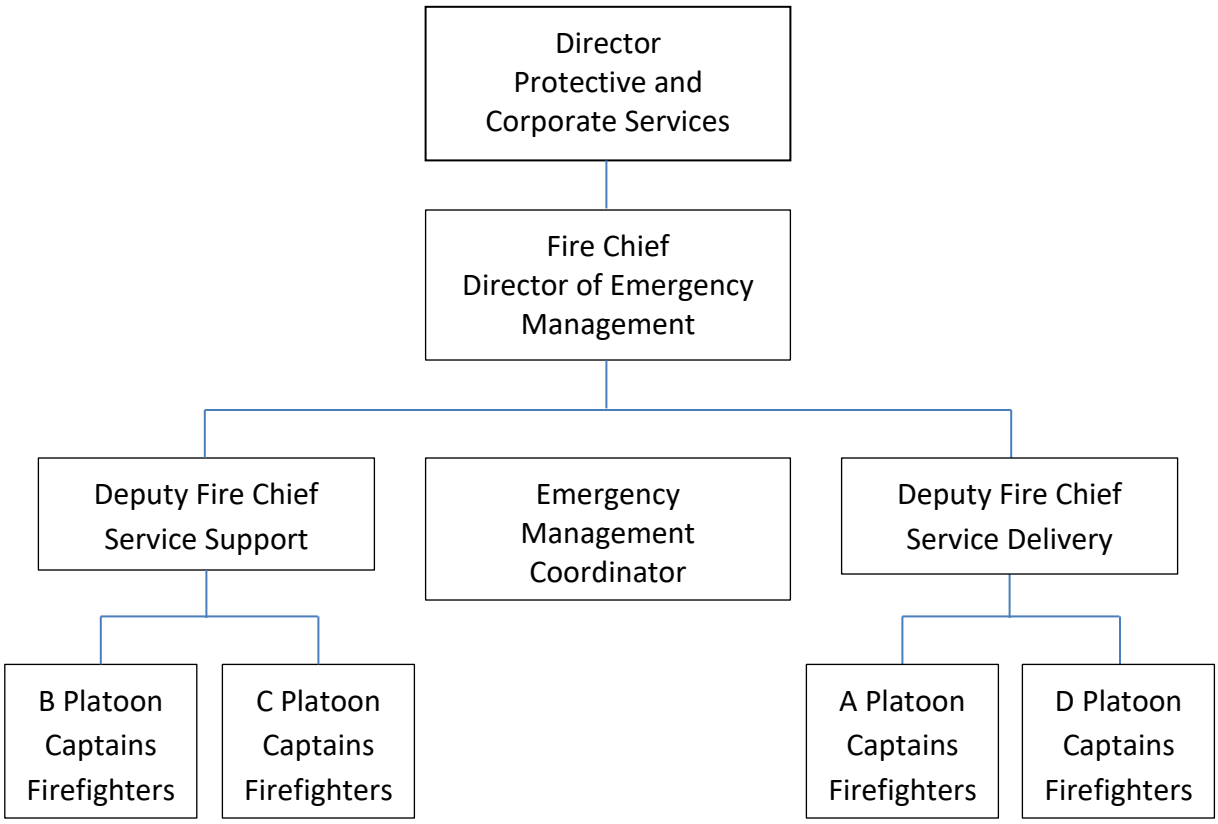
As illustrated in Figure 3, OFR Organizational Structure, OFR is currently funded to employ the following positions:

- 1 Fire Chief/Director of Emergency Management
- 2 Deputy Chiefs
- 1 Full-time Administrative Assistant
- 1 Temporary Casual Administrative Assistant

- 1 Emergency Management Coordinator (Reports to Chief, part of Corporate Services)
- 8 Career Captains (+1 acting Captain developing SOGs)
- 28 Career Firefighters
- 8 Community Firefighters

Note: *OFR staffing levels of career and community firefighters vary given the recruitment and retention challenges.*

Figure 3: Okotoks Fire and Rescue Services Organization Chart (2023)



The approved on-duty suppression staff that provides 24/7 emergency response coverage includes:

- 1 Chief Officer (on-call)
- 2 Captains
- 6 Firefighters

During interviews it was identified that maintaining the recommended duty staffing of 8 personnel (4 per fire station) is a challenge. Staffing levels, emergency response capacity and the effective response force (ERF) is further discussed in Sections 2.8, 2.9, 3.2.5 and Section 4 of this FRSMP.

3.2.2 Department Leadership, Management and Operations

Effective leadership and management are paramount in guiding an organization towards success. With increasing pressure to find value for money, elected officials are relentlessly looking for ways to increase the value for money proposition for their citizens. Department managers are challenged to maintain or increase services while avoiding services cost increases. This environment generates the need for communities to adopt more business-like approaches for delivering public safety services.

Managers of fire and emergency services are required to develop private sector-like business practices such as:

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

In some cases, this requires a shift from the historical approach of focussing on day-to-day service delivery to scanning the future and moving towards a department that is responsive to change, sustainable and efficient.

The leaders of fire departments today must also adopt a more business-like approach to leading and managing their departments. Along with municipal senior administration, they need to be proactive and examine all aspects of their service delivery systems to look for innovative efficiencies and effectiveness.

The following theoretical figure suggests how to allocate leadership time to effectively operate a fire department, scan for improvement opportunities, and implement system improvements:

Figure 4: Fire Service Time Management

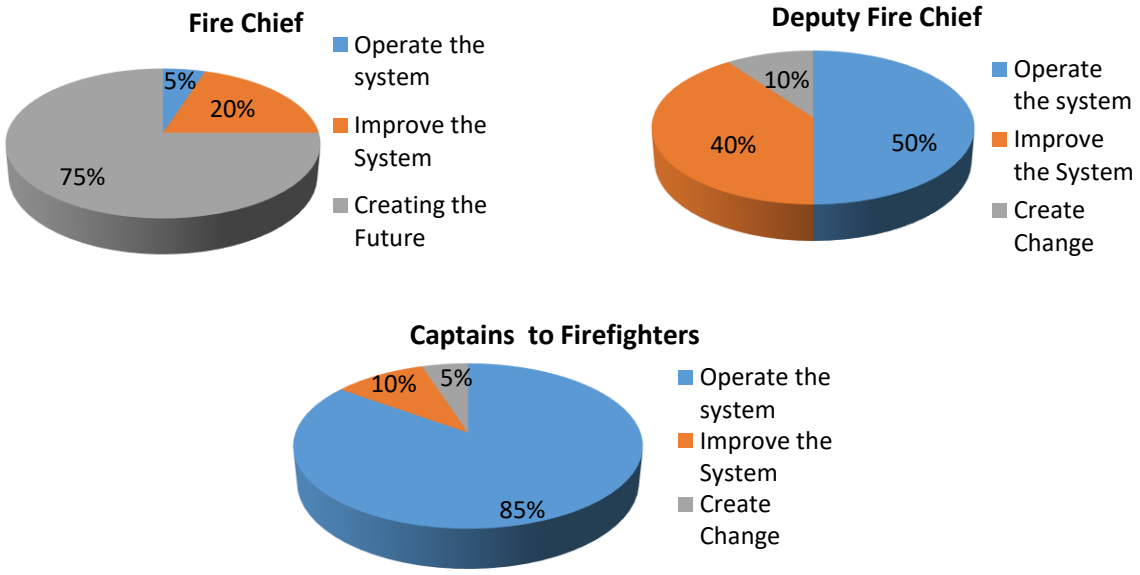


Figure 4 illustrates two important points: one, the amount of time allocated to operating, improving, and identifying strategy varies at different levels in the organization; two, senior leadership positions in OFR must retain the capacity to identify and implement change.

Traits of a high performing team include:

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

It is extremely important that administration works cohesively as a team. A high functioning team is one that understands the roles and responsibilities of each member and brings their individual skills together in a collaborative manner to lead the organization in achieving their vision, mission, and goals. Therefore, it is important to promote role clarity by ensuring accurate and updated job descriptions are available.

Leadership is a function of all members of OFR. The positions of Chief Officers to firefighters contribute to the leadership required to achieve service excellence in a fire department. Day-to-day station leadership and management is the responsibility shared with the chief officers and each station officer. These positions play a critical role in leading, managing, and mentoring firefighters which 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.

OFR officers and firefighters are responsible for the delivery of most services. They are the primary point of interaction between a fire department and the public. Their leadership is exhibited by their professionalism and commitment to service excellence. OFR station officers have the greatest influence in the formation of public perceptions regarding the value and support of the fire service.

The importance of maintaining a team atmosphere across the department and commitment to common goals cannot be overstated. Despite the varying roles and responsibilities assigned to administrative, senior officer and more junior staff, the characteristics of a successful team should be promoted at every level in the organization. As strategic direction and vision are identified, they should be openly shared across the department.

This is especially true in a unionized environment where a division between in-scope and out-of-scope staff can erode the sense of belonging to a common team. Further to that, full-time officers and firefighters may work in isolation from the fire chief, and other chief officers. This heightens the need for senior leadership positions, including the chiefs, and station officers to communicate frequently and bridge, perceived or authentic, gaps regarding commitment to the mission of Okotoks and service excellence. It also highlights the need to recruit only the best candidates to join the OFR team.

3.2.3 OFR Administrative Positions

The OFR administrative positions consist of the fire chief, and two deputy chiefs supported by one full-time administrative assistant. All three chief officers work a Monday to Friday work schedule and share after-hour on-call responsibilities on a rotational basis.

The OFR chief officers have indicated their capacity to provide effective administrative and operational support is currently under strain because of the risk factors within the town of Okotoks as well as future challenges resulting from community growth and the evolving staffing model necessary to provide an effective fire service.

The chief officer's focus is typically on improving the current system and implementing change to meet future challenges. The reality of this work has required a download of some administrative responsibilities to the station officers, which in turn challenges their ability to fulfill their normal job requirements. Moreover, the responsibilities assigned to the fire chief and deputy fire chiefs including operations, training, fire inspections/investigations administration, and emergency management result in a workload capacity shortfall. The need for a full-time dedicated training officer, fire prevention officer and administration officer are discussed later in this section.

The administrative team demonstrates a positive and constructive relationship with the Okotoks Firefighters Association, IAFF Local 4829 executive. In addition, OFR firefighters demonstrate a high degree of pride and commitment to their department and community.

3.2.4 OFR Non-Administrative Positions

All OFR full-time firefighter positions are represented by the IAFF Local 4829. The current collective agreement between Local 4829 and Town of Okotoks provides clauses detailing the wages, benefits and working conditions. Okotoks maintains position descriptions that include the position purpose, duties, and responsibilities, as well as the qualifications necessary to hold each position.

The following OFR management and union positions descriptions that have been established by Okotoks are contained at Appendix E.

- Fire Services Manager (Fire Chief)
- Deputy Fire Chief
- Fire Captain
- Fire Services Assistant
- Firefighter

OFR transitioned from a paid-on-call (POC)/volunteer response service in 2021 to an enhanced composite department with a full time (career firefighter) initial response service. At the time of this transition the Fire Chief and Deputy Chiefs were expected to perform administrative, leadership, and management duties along with operational responsibilities. Since then, OFR has continued to evolve as the town grows to the point where, additional administrative leadership and management capacities are required for OFR.

This was emphasized during consultation with the OFR Chief Officers. The responsibilities assigned to the Fire Chief and Deputy Chiefs include operations, training, fire inspections/investigations, administration, and emergency management were identified as a workload capacity issue. Furthermore, the OFR staff survey included several comments regarding challenges with updating policies, guidelines and procedures, pre-emergency plans, fleet maintenance, training program, fire prevention and public education, and records management.

Recently a firefighter was seconded to the management team in an acting Captain's position working dayshift and was tasked to update the various operational guidelines as a requirement in the Alberta OHS Regulations for Firefighters. The workload demand and priorities on the Fire Chief and Deputies prevented their ability to complete the much-needed updates without the use of additional staff members to undertake this critical requirement.

As identified in Section 3, direct comparison with other similar sized municipalities is not recommended. The table below provides additional context from comparable departments in Alberta in terms of staff configuration that, in some cases, shows additional administrative, leadership and management capacity including training and fire prevention functions.

Community	Fire Chief	Deputy Chief	Assistant Deputy Chief	Fire Prevention	Support Staff	Total
Okotoks	1	2	0	0	1 FT, 1PT	4.5
Airdrie	1	3	0	4	4 FT	12
Cochrane	1	1	0	2	1 FT	5
City of Leduc	1	2	0	2	4 + 1 Business Analyst	10
Lloydminster	1	2	0	1	1 FT	5
Spruce Grove	1	0	3	1	4 FT	9
City of Grande Prairie	1	2	0	4	3 FT	9

Observation #4: Several similar sized fire services in Alberta are also looking for increased administrative capacity to meet daily operational and regulatory requirements. OFR's administrative capacity has been identified as a deficiency that will only be exacerbated by aspects such as the anticipated community growth, the establishment of a standards of coverage policy, and the need to monitor response performance. Specifically, the challenges with updating policies, guidelines and procedures, pre-emergency plans, fleet maintenance, training program, fire prevention and public education, and records management will not be addressed without additional administrative capacity.

Recommendation #4: Create a new Administrative Officer position assigned to the Fire Chief.

Suggested completion: *24 - 60 months*

Cost: *$120,000/year, plus benefits (Estimate)*

Resource: *OFR Operating budget*

Rationale: *Projections indicate Okotoks is on the threshold of a significant growth where demands on all municipal services will increase. This projection along with the implementation of the various recommendations outlined in this master plan emphasize the need for an administrative officer. Operational aspects for OFR include establishing and monitoring response performance measures, trend analysis, policy and guideline recurring updates, contract, and records management.*

The resources and commitment necessary to continue the development of OFR to meet the current and future demands of a rapidly growing community like Okotoks will require significant administrative and financial oversight and support. Adding additional capacity in the form of an administrative officer to assist the Fire Chief and Deputy Chiefs with the administrative, financial, business planning, and performance measuring would address this shortfall.

3.2.4.1 OFR Community Firefighter Program

OFR currently utilizes community firefighters to supplement the career staff for minimum staffing levels or additional emergency response capacity. OFR community firefighters do not have a formal job description, but they are expected to perform the same job requirements as the career firefighters while on duty.

Each community firefighter is supplied with one complete set of equipment and bunker gear, they get half of the clothing issue that fulltime staff get, and all the training they need to maintain their competence to supplement fulltime firefighters. This adds additional residual costs to the program which can't be quantified.

OFR can recruit and retain up to 30 community firefighters, but only eight are currently in the program. And of those eight, only two have been consistently available at any given time for regular shifts or emergency deployment. Most community firefighters are employed fulltime somewhere other than OFR or live in a different community which makes it even more challenging.

As in most communities in Canada, the practice of relying on the community firefighters or volunteer firefighters is proving to be an ever-increasing challenge. The current environment for attracting qualified firefighters is further worsened by opportunities in fulltime firefighter career positions rather than volunteer or part-time and in some cases pursue other career options.

OFR is further challenged with competition from neighboring communities, such as Calgary, Chestermere, Cochrane, and Airdrie, to attract the same caliber of recruits. These communities operate similar staffing models employing career or fulltime firefighters with the ever growing need to recruit qualified individuals. In the case of Calgary, they are in the second year of a 5-year cycle to hire over 500 new firefighters by 2027. The City of Airdrie, who hire fire-medics, are in the process of bringing on a 4th fire station which will require additional staffing. The City of Chestermere and the Town of Cochrane are no different in this regard.

Career-minded firefighters will sometimes look outside of their local area, even to other provinces, to gain fulltime employment. They will even take extra training to fulfil their dream of a fulltime career in firefighting.

Along with the inability to call up enough community firefighters to supplement the career staff, there are also added issues in training and outfitting community firefighters. When consulting with various communities that utilize community, casual or volunteer firefighters, the biggest and costliest issue next to recruitment and retention is training. The training requirements mandated by Alberta Occupational Health and Safety, while keeping to the NFPA standard, place an additional responsibility on all employers and firefighters which effects both recruitment and retention. It is this additional commitment to maintain training qualifications that have many departments across Canada experiencing low recruitment and higher than normal attrition rates in community, casual or volunteer firefighters. Okotoks is not unique in this regard.

Observation #5: The current practice of relying on the community firefighter pool for scheduled staffing and/or calls has proven to be ineffective. There has been a dramatic decrease in the availability of community firefighters in the Town of Okotoks. OFR has an approved community firefighter program of 30, but only eight are currently active in the program, with typically only two showing up at any given time. It proves to be even more challenging and ineffective on short notice.

Recommendation #5: Move to phase out the community firefighter program and transition to a full-time career model.

Suggested completion: *12 - 60 months*

Cost: *TBD*

Resource: *OFR Operating budget*

Rationale: *The pool of community firefighters has extremely limited availability creating increases in overtime costs and operational challenges to maintain minimum staffing levels. Efforts should be concentrated on establishing a full-time firefighter model. Cost avoidance for wages, training, and PPE necessary to the community firefighter program will offset costs to fund the transition to a full-time model.*

3.2.5 Staffing Ratio

Typical fire service staffing ratios for 1 full-time equivalent (FTE) 24/7 position on each of the four platoons range from 4.9 to 5.5 FTE positions but are dependent upon the respective labour contract entitlements for scheduled absences, vacation, lieu time, sick leave, etc. In addition, deployments, off-shift training, regional requirements, or secondments need to be applied to the calculation.

As an example, utilizing the above-mentioned staffing calculation should provide the basis for calculating the OFR staffing ratio. The staffing ratio determines the number of firefighters required to sustain a Minimum Duty Strength (MDS) per FTE on a 24/7 basis. Operational response requirements for critical tasks and the ERF are not considered in the staffing ratio.

OFR Staffing Ratio Calculation

- One full-time fire department position requires 2,184 hours per year (42 hours per week x 52 weeks).
- Total coverage required annually is 8,766 hours (365.25 days x 24 hours).

Deductions per FTE:

- Sick time (4-year average): 67.45 hours
- Vacation accrued (4-year average): 192 hours
- Lieu time (4-year average): 38.45 hours
- Training (4-year average): 60 hours
- Other leave (WCB): 63.2 hours

Therefore, the actual availability per FTE is 1,740.7 hours per year (2,184 hours - total deductions).

Required staffing ratio: 8,766 total coverage hours / 1,740.7 actual availability hours per FTE = 5.04.

Consequently, a MDS of 8 firefighters with a staffing ratio of 5.04 requires 40 firefighters, or 10 per platoon in a 4-platoon organization.

Observation #6: OFR currently maintains a minimum duty strength (MDS) of six firefighters (two captains and four firefighters) between the two fire stations. The recommended staffing model is to have eight firefighters (two captains and six firefighters) on shift. With a total staff complement of 36 firefighters and the lack of a consistent number of community firefighters available, off-duty firefighters on overtime call-in are utilized to backfill MDS vacancies to maintain the MDS of six on a 24/7 basis. It is difficult for OFR to assemble an ERF to address a single detached structure fire (16-17 firefighters is industry standard).

Recommendation #6: Increase the OFR full-time staffing complement to 40.

Suggested completion: *1 - 12 months*

Cost: *TBD, based on results of an updated staffing ratio analysis*

Resource: *OFR Operating budget*

Rationale: *To sustain This increase will maintain an optimal operational staffing level to sustain the core service performance expectation and the approved minimum staffing levels of four at each of the two fire stations.*

Observation #7: The current OFR job descriptions were last approved in August 2017. Job description documents should be updated regularly to ensure they accurately reflect current responsibilities.

Recommendation #7: Review and update as necessary all OFR job descriptions.

Suggested completion: *12 - 18 months*

Cost: *Administrative time only*

Resource: *OFR and Town of Okotoks staff time*

Rationale: *Job roles and responsibilities can change or evolve over time along with the organization. Updated job descriptions:*

- *State the general purpose of the position.*
- *Attract the right employee.*
- *Assist with compensation packages.*
- *Set employee understanding of positions and expectations.*
- *Provide employee performance measurement.*
- *Guide training.*
- *Protect employer in cases of termination.*

3.3 Remuneration, Recruitment, Selection, Retention, Promotion

Public service is a sought after and competitive employment sector. Local governments must consider the cost of competitive salaries and benefits to attract the best candidates.

3.3.1 Remuneration

The Town of Okotoks and OFR are committed to recruiting the best candidates possible. Competitive salaries and benefits are offered to all positions. Currently all OFR exempt positions are set by Okotoks' Council.

IAFF Local 4829 in-scope positions are provided hourly rates of pay identified in the current collective agreement. All rates of pay are negotiated relative to the first-class firefighter's hourly rate of pay. This negotiated or arbitrated approach is common to all fire departments represented by IAFF locals. Hourly rates are typically based on local conditions and the comparative rates of other IAFF locals across the province.

In addition to competitive salaries, the Collective Bargaining Agreement includes additional financial benefits including:

- Call-in and overtime
- Approved leaves
- Defined benefit pension plan
- Extended health care
- Drug and medical appliance benefit
- Life/disability insurance
- Long service recognition

3.3.2 Recruitment

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

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

Currently, a comprehensive process for recruiting is followed for career fire suppression staff. Job postings including minimum requirements and process are posted on the Okotoks website. The minimum qualifications for OFR full-time firefighters include:

- NFPA 1001 Level 1&2 certification.
- NFPA 1002 Standard for Fire Apparatus Driver/Operator professional Qualifications
- ICS 200.
- Minimum of primary care paramedic (PCP) and be Alberta College of Paramedics (ACP) registered and in good standing.
- Valid class 3 and 4 driver's license (Maximum of 6 demerits) with a "Q" endorsement.

3.3.3 Selection and Training of Recruit Firefighters

OFR has a comprehensive career firefighter selection and training process. Candidates are required to possess the minimum qualifications for consideration.

Selection steps:

1. The candidates must pass a firefighter written test based on IFSTA Essentials
2. Pass the Physical Ability Test
3. Fire department interview with candidate
4. Full medical assessment.
5. Once the candidate is hired, they will be placed on probation and commence formal training based on the NFPA 1001 Level I and II standards.
6. After successful completion of the OFR training program, they will be assigned to a platoon and shift.
7. As a member of a shift, the probationary firefighter will continue to be trained and evaluated by the station captain while participating in all aspects of the position subject to assignment by the captain.
8. Probationary firefighters will be transferred to a different shift at 6 months and continue to be evaluated by the new Captain.
9. Successful completion of the probationary period will deem the firefighter as a permanent member of the OFR.

The requirement for all OFR career firefighters to possess a current ACP primary care paramedic designation, combined with the industry wide demand for career firefighters has limited the number of qualified applicants over the last two hiring processes. Most recently OFR has hired a few qualified firefighters that do not possess the primary care paramedic certification and registration with the requirement they successfully achieve the necessary training and ACP registration within a two-year period.

OFR will assign one of the career firefighters to lead the training course, which takes a qualified firefighter off the shift, resulting in increased pressure to back-fill the position and maintain the desired staffing level on a regular basis.

3.3.4 Retention

Career full-time firefighters' retention is not an issue for the OFR in fire suppression. The highest turnover typically exists in the community firefighters. Full-time positions in the OFR are highly sought after and valued. OFR offers a competitive salary and benefits package. Occasionally, full-time employees may leave to pursue other opportunities, but this is a relatively infrequent occurrence. Again, the provincial OHS training and certification requirements together with opportunities for full-time employment in other fire services has affected the attraction and retention of community firefighters.

The typical reasons include:

- Retirement
- Increased demands of Department obligations
- Low call volume
- Family obligations
- Primary work obligations
- Childcare
- Physical move from the community
- Increased training demands
- Occupational health and safety requirements
- Full-time/career firefighter opportunities
- Low compensation or job satisfaction

3.3.5 Promotions and Advancement

The promotional policy for the OFR firefighters is detailed in Section 21 of the Collective Agreement between the Town of Okotoks and the Okotoks Firefighters Local 4829. Full-time members shall progress through the positions listed in the Schedule of Base Wages attached to the Agreement, subject to:

a) meeting the minimum time requirements for experience at each level. This time requirement shall be one (1) year at each level or equivalent.

b) successful completion of the relevant courses and examinations, as reasonably determined by the Fire Chief for each level; and

c) a satisfactory performance evaluation.

When vacancies or other promotional opportunities occur, a promotional board is established consisting of the fire chief, deputy chiefs and an HR representative.

3.4 Training

Ongoing training and competency development are essential 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.

OFR 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 operational duty chiefs, station captains and vehicle mechanical services staff is required to ensure minimal impact to service delivery while meeting OFR identified priorities.

OFR does not have a dedicated training officer 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. OFR delivers training through a combination of:

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

OFR has developed quarterly training objectives and schedules that fall primarily to each station captain to complete. Feedback from the interviews revealed concerns with the ability to complete the scheduled and speciality training because of competing operational requirements. As well, there was concern expressed about a lack of consistency of training between platoons and fire stations.

Observation #8: OFR does not have a dedicated training officer requiring the current training program coordination to be shared by chief officers and individual platoon/station officers which is not a focused or primary responsibility. The training program is required to ensure mandatory minimum firefighter certification standards are delivered to new recruits and ongoing maintenance training for existing staff. Initial recruit and ongoing training programs to maintain core competencies are a normal course of action for each member of the fire service.

Recommendation #8: Establish a full-time Training Officer position to oversee and coordinate the training requirements for OFR.

Suggested completion: *6 - 24 months*

Cost: *$120,000/year, plus benefits (Estimated)*

Resource: OFR Operating budget

Rationale: *The management of a fire service training program must ensure consistency and coordination of delivery to the entire organization. This is too demanding and consuming to be performed off the side of someone's desk. The addition of the recommended training officer position will add training capacity and provide consistency of training throughout the organization.*

A dedicated training officer assigned the oversight and coordination of these training obligations will assist with consistent and timely delivery of these training obligations. This position will help ensure all firefighters have consistent training to the level of service set by the OFR. This position could also provide operational response duties as an on-scene safety officer or other operational support duties to the incident commander, as needed.

Observation #9: OFR does not utilize a formal OFR specific apparatus driver/operator course or certification for each unique type of apparatus within their fleet. Each recruit is required to possess a NFPA 1002 apparatus driver/operator certification upon hiring and given an initial driving assessment by one of the Deputy Fire Chiefs prior to placement on a platoon. Driver and operator instruction is typically delivered at the individual station and platoon level by one or more of the senior members of the shift. There is the risk of relying on this training method alone to ingrain inconsistent or inaccurate practices.

Recommendation #9: Develop, implement, and document a policy-driven apparatus driver/operator program tailored to address each type of apparatus utilized by OFR.

Suggested completion: *12 - 24 months*

Cost: *To be determined. (Cost is based on course purchase and staff development time including the time required for the instructor and students to complete the program.).*

Resource: *OFR Operating*

Rationale: *The lack of a policy-driven driver training program along with a documented competency assessment increases the risk to both the firefighters and the public as well as potential liability to the corporation. Without a comprehensive driver/operator instructional program including competency assessment, this practice creates increased risk to both the firefighters and the public and potential liability to the corporation.*

Any personnel requested to drive and operate OFR apparatus should be properly trained, licenced, and evaluated for competency. Each type of apparatus should have specific orientation and performance criteria that is required of each driver/operator.

3.4.1 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 POC or paid-per-call volunteer 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 1051: Standard for Wildland Firefighting Personnel Professional Qualifications
- 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

3.5 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

OFR participates in the Town of Okotoks health and wellness program, including representation of two OFR members (one captain and one deputy chief) on the OHS committee. This current process has provided challenges for OFR including:

- Regular Corporate OHS meetings are difficult to attend while on duty.
- Corporate OHS has a focus on general safety that may not be specific or applicable to OFR.
- Extended process to implement change.
- Meeting minutes are not posted in the fire stations.

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.

OFR staff have access to psychologists for incident de-brief sessions and contracted services with up to $2500.00 per firefighter for mental health assistance.

Observation #10: It is difficult for OFR to adequately participate in the Town of Okotoks health and wellness committee. There are several fire industry related health and safety initiatives and programs that should be pursued by OFR.

Recommendation #10: Develop a subcommittee of the Town of Okotoks Corporate Health and Safety Committee for OFR that will allow for effective participation from OFR staff.

Suggested completion: *6 - 12 months*

Cost: *TBD*

Resource: *OFR Operating budget*

Rationale: *The fire service by nature, has unique health and safety considerations that need to be specifically addressed including,*

- *Increased personal risk to employees*
- *24/7 operations*
- *24-hour operational shifts*
- *Increase in cancers, heart disease and trauma*
- *Mental health*

There is sufficient justification to form an OFR-specific OHS committee that would operate as a subcommittee of the Town of Okotoks OHS committee.

3.6 Policies, Procedures and Guidelines

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.

Standard Operating Guidelines (SOGs) are a set of documented expectations for firefighters to follow to achieve a desired goal during an emergency event. SOGs are considered at emergency scenes where there is some flexibility on how activities are conducted, taking into consideration the safety of the public and emergency responders. Standard Operating Procedures (SOPs), however, are formal policies that specify a course of action, thereby ensuring efficiency, predictability, consistency, and safety for all firefighters operating on the fire ground.

A critical tool in the employer's scope of responsibility is the establishment of approved policies, procedures, and guidelines. These documents must be appropriate for the situation, vetted, approved, and documented. As a requirement of the Alberta OHS and WCB regulations, it is the employer's responsibility to develop, institute and establish compliance. The employees have a right to know about potential hazards in the workplace, a right to participate, and in certain circumstances a right of refusal.

Note: *OFR is currently updating their library of policies and procedures.*

3.7 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

OFR utilizes the industry recognized Blue Card Command[14] 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 OFR personnel are trained on this command system, and it is utilized at all emergencies.

There was concern expressed through the interview process that dispatchers may not be Blue Card trained and not able to provide the desired support. Investigation into this has confirmed that the FRESC dispatchers are trained in the Blue Card system. However, as part of recommendation #15, OFS should ensure that regular Blue Card training is maintained as an expectation. Dispatch services are further discussed in Section 3.8.10.

[14] *B Shifter - Blue Card*

3.8 Core Services

As most modern fire departments, OFR provides a broad range of services to the citizens of Okotoks and contracted areas. Any services provided should align with the identified community risks and the needs of the citizens. Continuous evaluation of community risks and fire department response capability is necessary to support ongoing emergency planning. Most citizens will not have the need to access fire department services however, when emergencies occur, service expectations are high. Good planning processes are necessary to ensure citizens receive the services they expect, and the community receives good value for their investment.

Observation #11: The Town of Okotoks has Bylaw 10-17, A Bylaw of the Town of Okotoks in the Province of Alberta to Establish Fire Services in and for The Town of Okotoks. This bylaw commonly known as the 'Fire Services Bylaw' includes the purpose of the Okotoks Fire Services to provide fire protection, rescue, medical assistance, and fire prevention services, however, does not identify the specific core services, standards, performance levels and limitations.

Recommendation #11: Establish a Standards of Cover document that details Council approved core services, standards, and performance levels.

Suggested completion: *6-12 months*

Cost: *Neutral*

Resource: Staff time, OFR Operating budget

Rationale: *A Standards of Cover is a document that identifies the hazards and risks within the community and documents the Fire Services current responsibilities (core services) and limitations. This document is a guide towards continuous improvement to address current and future growth, hazards in the community, and changes to response performance.*

In Alberta, municipalities are not required by law to provide fire and rescue services. The Municipal Government Act empowers the authority having jurisdiction, the municipality's governing body, to establish fire departments but does not specify which services are to be provided nor does it specify a service level. However, having council-approved policy identifying services and service levels, sets a mandate for the OFR to achieve, outlines what the community can expect for services from the fire department and is considered a best practice.

An SOC creates several benefits to the operation and governance of OFR. The comprehensive risk analysis would identify all high, extreme, and unique risks within the town's demand zones. It also involves a complete review of existing services and service levels, standard operating guidelines and policies, a review of fire department resource distribution and concentration based on risk factors, and fire department performance measurement and reporting. These are all requirements within the CFAI accreditation process.

3.8.1 Structural Firefighting

Residential fires are a leading cause of fire-related death, injuries, and property loss in Canada. OFR firefighters are trained and certified to the NFPA 1001 Level I and II Standard for Firefighter Professional Qualifications. Structural fire suppression encompasses a wide range of tactics for control and extinguishment of fires originating from several sources. Single-family dwellings are the most prevalent building type in most communities. As a result, these types of structure fires are typically the most probable, but only rated as a moderate risk as the consequence are limited to one or two properties.

Structure fires frequently require entry into the building for fire suppression and rescue. These tactics 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 critical tasks are completed.

Structure fires are not a frequent type of fire encountered by OFR (75 for the reviewed period 2018-2022), however on-duty staffing, and equipment need to be adequate for firefighters to safely perform the tasks expected of them. Based on the OHS staffing model, the applicable NFPA standard would apply.

> *NFPA 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments, suggest an effective firefighting force of 16 for a 2000 ft^2 residential fire without basement.*

It is noted that OFR is equipped and properly trained to respond to fires that originate within or outside a structure, allowing safe and effective rescue and suppression tactics for the control and extinguishment of fires.

The majority of the OFR staff surveys and interview participants identified the initial response (1st alarm) requires the reliance on call back of career and community firefighters to safely manage minor structural fire incidents. As previously discussed, OFR has a maximum staff compliment of four fire suppression staff on-duty at each of the two fire stations. Confirmed structure fires typically require the utilization of the call-back of off-duty and community firefighters to safely handle an interior attack and/or rescue.

The emergency response performance of OFR for the different call types is further discussed in Section 4 of this report.

3.8.2 Wildland Urban Interface

Wildland urban interface (WUI) fires are identified in the CRA as high risk and have seen an increasing burn area, particularly in 2023. Furthermore, large WUI events are typically active for extended periods and can quickly exhaust local resources. OFR fire suppression staff are well-trained and possess the necessary equipment and PPE, except for a full-size water tanker (discussed further in section 3.11.2.1) to fight these fires in their response zones. Additional support can be requested through mutual aid or Alberta Forestry.

3.8.3 Medical First Response

Medical co-response is a valuable service provided by OFR at the PCP level. At more than 2256 responses over the 2018-2022 years, medical co-response is the most frequent service provided by OFR. The distribution of fire department resources often exceeds that of ambulance resources and as a result, firefighters are often able to respond to medical emergencies faster, or in support of, ambulance services.

In Alberta, fire department resources across the province provide support to Alberta Health Services emergency medical services. OFR is trained to provide advanced PCP medical care recognized by Alberta Health Services. The department currently has an agreement with AHS for delta and echo priority emergencies, which are potentially or immediately life-threatening events in support of AHS ambulances.

3.8.4 Motor Vehicle Incidents, Vehicle Extrication

MVI 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. 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 and fully electric vehicles containing fuel cells and/or batteries. Vehicle collisions or events involving transport vehicles often pose the additional challenge involving dangerous goods or requiring heavy equipment to manage.

OFR is trained to NFPA 1001 and 1006 standards and is well equipped to manage vehicle collision and extrication incidents. MVIs were the third most common incident over the five-year period (225 for the 2018-2022 period). Alberta Provincial Highway 2A runs through Okotoks. The highway is utilized by many commuters connecting to highway 2 to the north and highway 7 to the south. Responses on the roadways within Okotoks' response area may present hazardous conditions for responders. However, the OFR is well-trained and equipped to respond to these types of incidents when the need arises.

The CRA identifies peak periods of commuter travel and that 60% of commuters travel to and from Calgary between the hours of 6-8 am and 4-6 pm with a higher probability of MVIs.

3.8.5 Dangerous Goods Response

Response to dangerous goods/hazardous materials (hazmat) 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 hazmat response.

There are three hazmat response service levels. The first level of service is the awareness level. This level is the most basic and is for persons who could be the first on the scene of emergency involving hazardous materials. 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 the 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/hazmat technicians, trained in the use of specialized chemical protective clothing and control equipment. Responders at this level take offensive action in responding to releases or potential releases of hazardous materials. Given the required training, cost of equipment and limited community need, this level of service is only provided by larger communities in Alberta.

OFR responds to dangerous goods incidents at the operations level with sufficient training and equipment to safely manage most of these types of calls. OFR does not have a dedicated vehicle for dangerous goods response but rather carries minimal equipment on their engines. While incidents involving hazardous materials are infrequent (28 for the 2018-2022 period). There were 62 gas leak/odour and 49 fuel spill/odour responses during the same period which can be considered a hazardous materials response. These types of events can result in significant environmental and life-threatening consequences. In addition, a hazardous material release is identified as a community risk factor. Given that the on-duty response of OFR is provided at the operations level of service, outside support from the Calgary Fire Department or industry personnel may be required to manage these types of incidents.

3.8.6 Technical Rescue Services

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

OFR trains their firefighters to a vast range of technical rescue disciplines (reference NFPA 1006 standard), including:

- Motor Vehicle Incidents (discussed above)
- Water rescue
  - Trained to static water only.
  - Have a rescue boat in OFR inventory.
  - 9 requests for service during the 2018-2022 period.
  - The Sheep River and trails in the area provide a moderate risk requiring an appropriate response
  - CRA identifies flooding as a high risk in areas requiring appropriate response.
- Ice rescue
  - Trained to static water/ice only.
  - 1 request for service during the 2018-2022 period
  - Moderate risk requiring appropriate response
- Trench Rescue
  - Trained to operations level.
  - No calls for service during the 2018-2022 period.
  - The CRA identifies increased building construction in the community, thereby increasing risk
- Low slope rope rescue
  - Trained to operations level
  - 1 request for service during the 2018-2022 period
  - Proximity to trails warrants a moderate risk requiring appropriate response

Observation #12: Specialized technical training is offered to many of the OFR firefighters. OFR trains several firefighters on each platoon on each of their technical rescue disciplines. These types of disciplines require initial and ongoing specialized training and equipment. Maintaining competencies in technical rescue disciplines that are not utilized frequently becomes a challenge to provide effective recurring training including cost efficiencies.

Recommendation #12: Determine the appropriate level of specialized rescue training that aligns with Council-approved level of service.

Suggested completion: *12 - 24 months*

Cost: *TBD (Based on Council-approved level of service)*

Resource: *OFR Operating Budget*

Rationale: *OFR technical response capabilities should correspond with Council-approved level of service and matched to the risks identified in the community risk assessment. The Town of Okotoks and OFR must ensure qualified staff with sufficient equipment, training and approved protocols are in place.*

Furthermore, NFPA 1201: Standard for Providing Emergency Services to the Public, Section 4.5.3.1 states: "The fire and emergency services (FESA) leader shall develop and adopt a formal policy statement that includes the specific types and levels of services to be provided by the organization, the service area, and the delegation of authority to subordinates." Additionally, service levels should be achievable, measurable, and reported on.

3.8.7 Fire Prevention Services

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.

Okotoks is an accredited agency under the Alberta Safety Codes Act in the fire discipline. OFR relies on operational on-shift staff to conduct fire prevention duties. The Safety Codes Act and the fire discipline QMP program is discussed further in Section 2.

3.8.7.1 Fire Code Inspection Services

Modern building codes including life-safety design and operating requirements are key components of risk management.

The National Building and Fire Code of Canada, Alberta Editions 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 fire code requires the owner to have regular inspections for fire alarm and sprinkler systems, updated fire, and emergency evacuation plans, unobstructed means of egress and other fire life-safety systems based upon the Major Occupancies Classifications and other criteria contained in the fire code. The frequency or cycle for fire inspections is not regulated and this is left to the Authority Having Jurisdiction (AHJ). It is the occupant or property owner's responsibility to comply with the National Building and Fire Code of Canada, Alberta Editions.

Interviews and discussions with OFR safety code and management staff indicate the ability to conduct regular fire inspections of properties under Okotoks' Quality Management Plan is a significant concern.

Observation #13: Currently, there are an estimated 2900 properties that require cyclical fire prevention inspections. As identified in Section 3, direct comparison with other similar sized municipalities is not recommended however, all the services analysed have established fire prevention safety codes positions with regular workweek oversight. The consistent growth and anticipated development in Okotoks along with the current process of providing these services has been identified as being unsustainable and inadequate for the future of the municipality. At present, fire prevention inspections are conducted by on duty platoon staff who are Safety Codes Officer (SCO) certified. This results in challenges with consistency, compliance monitoring, scheduling and on duty platoon priorities. During the consultation and survey, the fire prevention program emerged as an issue in contributing to overall service effectiveness.

Recommendation #13: Establish a full-time Community Safety Officer that provides program oversite for the fire prevention inspections, investigations, and public education programs.

Suggested completion: *1 - 12 months*

Cost: *$120,000/Yr. (Estimated)*

Resource: *OFR Operating budget*

Rationale: *A community fire risk reduction program requires a means to identify and address fire and life safety concerns utilizing both regulatory/enforcement tools as well as ongoing compliance monitoring and public education. Platoon staff that do not work weekdays combined with SCO skills proficiency, emergency responses and training, and routine platoon duties challenge the capacity to meet the requirements identified in the QMP. To do this effectively a municipality the size of Okotoks along with the growth projects, will require a dedicated position such as a Community Safety Officer.*

3.8.7.2 New Developments Plan Reviews

Working with Okotoks' Community, Growth, Investment and Sustainability Department, 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.

3.8.7.3 Fire Cause and Origin Services

All fires causing injury, death and property loss are required 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 fire causes. Examples include cooking safety, smoke alarm maintenance, and fire prevention. Results of fire investigations within Okotoks can provide the foundation for identification of significant risks and the development of public education programs or initiatives.

OFR conducts their own fire investigations utilizing internal staff including the fire chief, deputy fire chiefs and qualified captains. All required reporting is completed and submitted to the province as required.

3.8.7.4 Fire Public Education Services

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. OFR staff work with schools and other agencies such as Boy Scouts to further fire prevention messaging. OFR also offers the widely recognized infant car-seat program at each of its fire stations.

3.8.8 Pre-Emergency Planning

Pre-fire, emergency or 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 individual platoons which were considered more of a familiarization exercise.

OFR administration is in the process of formalizing these pre-incident plans and currently has assigned one of the captains to this portfolio.

Observation #14: OFR firefighters have conducted limited pre-planning when doing a fire inspection to look at access points, exit locations and other components to pre-plan or assist with firefighting operations. This program is not formalized, and an enhanced emphasis should be placed on the completion and implementation of a formal pre-emergency plan program. OFR has access to the town's building inventory and can serve as the basis for a formal pre-emergency-plan process.

Recommendation #14: Establish a formalized pre-emergency plan inventory program utilizing the principals of NFPA 1620: Standard for Pre-incident Planning.

Suggested completion: *12 - 24 months*

Cost: *Neutral*

Resource: *Staff time*

Rationale: *Formally capturing relevant pre-emergency planning information is a critical requirement for safe and effective emergency operations and public safety.*

3.8.9 Citizen Assist and Public Services

Fire departments play an important role in the community's public safety services. When citizens perceive an emergency or an urgent request for assistance, the agency most frequently called to help is the fire department. These types of requests can vary broadly - from a request to rescue a pet to help with flooding. In reviewing OFR response data, this response type occurs relatively frequently within Okotoks. There were 128 calls for public assistance during 2018-2022. OFR should continue to provide this service where practical. It is a value-added service of considerable importance for citizens making the request.

3.8.10 911 and Fire Dispatch

The Foothills Regional Emergency Services Commission (FRESC) provides emergency fire dispatching services for Okotoks through contract. In addition to answering 911 calls, FRESC dispatches numerous fire departments in their large rural service area.

The dispatch provider for a fire service plays 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 2025. 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.

There were numerous concerns expressed during the interviews and OFR surveys regarding dispatch service provided by FRESC, the state of current hardware on the apparatus and within each of the fire stations, records management, and a lack of standard guidelines around dispatch and deployment. IT support, RMS systems and CAD issues are further discussed in Section 4 of this report.

Observation #15: Through our interviews, it was identified that several operational issues between OFR and FRESC appear to be at the forefront of operations. There have been several incidents where calls for OFR have not been processed to the level that aligns with OFR operational expectations and guidelines. Additionally, concerns related to the CAD system often seem to involve system reliability and the time required for the system to provide information to crews.

There is also the absence of an agreement stating key performance indicators, (KPI) expectations, processes, and quality assurance measures for the services provided by FRESC to OFR. This has led to ineffective operational effectiveness and in some cases significant safety concerns. Presently, there is no format for effective communication between the leadership of FRESC and OFR.

Recommendation #15: Establish a mutually agreed service delivery agreement that includes performance expectations, processes, and quality assurance measures to be provided by FRESC.

Suggested completion: *1 - 6 months*

Cost: *Neutral*

Resource: *Staff time, OFR Administration*

Rationale: *Clear expectations must be defined to ensure that the level of service delivery is provided. The agreement should include a regular communication process between the OFR and FRESC leadership to foster continuous improvement and improved relations.*

Regular performance reviews allow for both parties to monitor and identify concerns or discrepancies. The parties must determine regular review intervals and provide for open communication channels to address operational issues as issues that go unresolved lead to decreased morale and potential conflict. There must be an effective mechanism to raise issues and seek solutions acceptable to all parties. New policies and procedures must be effectively communicated to all staff in each organization. The development of this communication process should involve the OFR Fire Chief and the Executive Director of FRESC. Processes should include regular meeting schedules with appropriate personnel from each agency to discuss operational issues and solutions.

In our opinion, there is a significant benefit for all parties to continue their relationship, enhance communications and exhaust every reasonable opportunity to work together. We also believe this will be the most cost-effective solution for the Town of Okotoks.

Observation #16: The Canadian Radio-Television Commission (CRTC) has mandated all primary and secondary 911 dispatch providers transition on to the NG911 system by March 2025. This requires individual agreements between the municipality, dispatch provider and Telus. Any necessary improvements required for equipment owned by the municipality must be anticipated and acquired for this transition.

FRESC is in the process of completing the improvements to meet the Next Generation 911 requirements laid out by the federal and provincial governments which will be required by March of 2025. They have made the necessary hardware and software upgrades in preparation for the transition to NG911. FRESC plans to begin operational testing of the new system in early 2024 with the expectation of being able to move NG911 fully online in their PSAP/Dispatch area in early summer 2024.

Recommendation #16: OFR establish an on-going communication process with FRESC to ensure proper internal measures are taken to align and take full advantage of enhancements available with the transition to NG911.

Suggested completion: *1 - 12 months*

Cost: *To be determined.*

Resource: *Town of Okotoks and OFR Capital Budget*

Rationale: *The implementation of NG911 will enhance the delivery of 911 services to the Town of Okotoks. The Town of Okotoks must ensure that any necessary improvements in their hardware and software are implemented and supported regardless of which dispatch provider is utilized in the future. Developing a regular communication process between OFR and FRESC during this transition will assist with identifying challenges and opportunities to take full advantage of this new technology.*

3.9 Emergency Management Program and Emergency Coordination Centre

The Alberta Emergency Management Act (AEMA) provides the legislative framework for local and provincial management of emergencies and disasters. It outlines the roles and responsibilities of the Minister of Municipal Affairs, the provincial government, and local authorities. The AEMA provides the authority for the granting of additional powers during a state of emergency or a state of local emergency and governs the coming into force, expiration, and termination of these states of emergency. The AEMA also has regulation making authority, under which the Disaster Recovery Regulation and the Government Emergency Management Regulation were established. More specifically the Local Authority Emergency Management Regulation directs local governments to establish local bylaws that pertain to disaster response.

The Okotoks Community Emergency Management Program (CEMP), Emergency Advisory Committee, Okotoks Emergency Management Agency Emergency Plan and Emergency Operations Centre has been developed under the authority of Okotoks Emergency Management Bylaw No. 15-23. The CEMP enables a centralized controlled and coordinated response to emergencies in the town.

The Okotoks Protective Services works with town departments, provincial and federal agencies to prepare for, respond to, and recover from emergencies that may occur in Okotoks. When a large-scale emergency occurs, Okotoks will activate its Emergency Response Program. The program details the methods in which Okotoks mobilizes its resources during a crisis. It also ensures all town organizations, emergency response services, and key agencies are fully aware of their respective roles and responsibilities.

3.10 Mutual Aid and Other Service Agreements

Large emergency events can quickly overwhelm the response capacity of most community fire departments in Alberta. This is especially true for smaller fire departments with limited resources. As a result, mutual aid and automatic aid agreements are necessary components to enhance response capacity for these low frequency, but potentially high or extreme consequence events. Okotoks has formal mutual aid and/or cost sharing agreements with:

- Calgary South Emergency/Disaster Mutual Assistance with city, town, and village participants
- Intermunicipal cost sharing with city, town, and village participants
- Municipal District of Foothills Number 31 “Master Shared Services Agreement”, “Fire Suppression/Rescue Mutual Aid Agreement”, “Fire Services Agreement”
- Town of Black Diamond “Fire Suppression Mutual Aid Agreement”
- Town of High River “Joint Fire Services Support Agreement”
- Town of Strathmore “Fire and Disaster Mutual Aid Agreement”

The principal purpose for entering into these mutual aid agreements is to promote and ensure adequate and coordinated resources are made available when requested from, or by a neighbouring municipality to minimize the loss of human life and property and damage to the environment in the event of an emergency that requires such additional resources.

Okotoks is a partnering participant in the *Foothills Regional Communications Board*. The purpose of this Board is for the formation and manning of an emergency communications organization to provide an adequate single call answer and dispatch system for the fire and emergency medical services.

Many of the intermunicipal agreements are not current and should be updated and reviewed regularly for adjustment as required. This provides for the clarification of agreements and consideration of any necessary adjustments. It may also lead to discussions regarding localized fire service response agreements and considerations about whether automatic aid in defined circumstances might be of additional value.

The following intermunicipal agreements are referenced:

1. Master Shared Agreement between Okotoks and Municipal District of Foothills no. 31. Agreement date: January 19, 2012
2. Acquisition and Construction Agreement between Okotoks and Municipal District of Foothills no. 31. Agreement date: April 9, 2012
3. Fire Service Agreements between Okotoks and Municipal District of Foothills no. 31. Agreement date: December 15, 2011, and December 28, 2018
4. Fire Suppression /Rescue Mutual Aid Agreement between Okotoks and Municipal District of Foothills no. 31. Agreement date: August 17, 2010
5. Fire Suppression Mutual Aid Agreement between Town of Okotoks and Town of Black Diamond. Agreement date: July 6, 2011
6. Intermunicipal Cost Sharing Agreement between Towns of Okotoks, Banff, Black Diamond, Canmore, Cochrane, Crossfield, High River, Strathmore, Turner valley, the City of Airdrie, and the Townsite of Redwood Meadows. Agreement date: April 30, 1996
7. Amended Alberta South Central Mutual Aid Agreement between Town of Okotoks, Cities of Calgary, Airdrie, Town of Banff, Improvement District No. 9, Village of Beiseker, Town of Black Diamond, Town of Canmore, City of Chestermere, Town of Cochrane, Town of Crossfield, Municipal District of Foothills No. 31, Summer Village of Ghost Lake, Town of High River, Rocky View County, Town of Irricana, Kananaskis Improvement District, Village of Longview, Town of Nanton, Town of Strathmore, Town of Turner Valley, Municipal District of Bighorn No. 8, Stoney-Nakoda First Nation, Tsuut'ina First Nation, Summer Village of Waiparous, Municipal District of Wheatland County. Agreement date: January 31, 2019
8. Next Generation 9-1-1 Local Government Service Agreement between the Town of Okotoks and Telus Communications Inc. Agreement date: November 29, 2022
9. Calgary South Emergency/Disaster Mutual Assistance Agreement between the Town of Okotoks, City of Calgary, Municipal District of Foothills #31, Town of High River, Town of Vulcan, Town of Turner Valley, Town of Black Diamond, Village of Cayley, Village of Longview, Town of Strathmore. Agreement date: January 16, 1991
10. Fire Suppression Mutual Aid Agreement between the Town of Okotoks and the Town of High River. Agreement date: December 12, 2014
11. Intermunicipal Agreement between the Town of Okotoks, participating municipalities, and the Foothills Regional Communications Board. Agreement date: October 28, 1996
12. Joint Fire Services Support Agreement between The Town of Okotoks and the Town of High River. Agreement date: April 4, 2005
13. Fire and Disaster Mutual Aid Agreement between the Town of Okotoks and the Town of Strathmore. Agreement date: April 7, 2006

Observation #17: There are several agreements with the Town of Okotoks that have impact on OFR. Many of the agreements were signed years ago and should be reviewed and updated as necessary.

Recommendation #17: Review and update as necessary all Town of Okotoks intermunicipal agreements affecting Okotoks Fire and Rescue.

Suggested completion: *1 - 18 months*

Cost: *Neutral*

Resource: *Staff time, Town of Okotoks and OFR operating budget*

Rationale: *Updated and relevant intermunicipal agreements are necessary for clarity of responsibility and resource allocation.*

3.11 Facilities

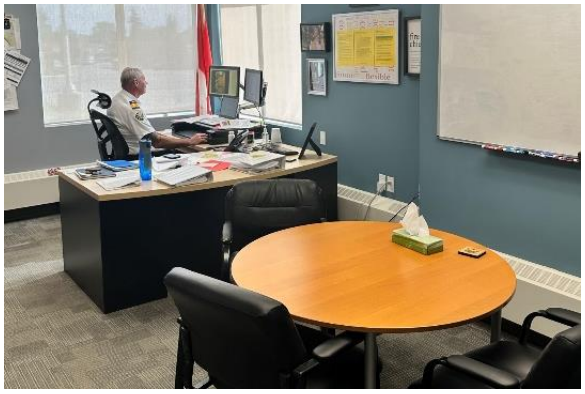
OFR provides fire and emergency response from two municipally owned and operated fire stations located within Okotoks. These locations provide good access for response to major roadway networks.

3.11.1 Fire Station Overview and Assessment

Note: *See Section 3.11.2 Apparatus and Light Duty Vehicles*

Facility Name:	Fire Station #1 (North Hall)		
Address:	132 Milligan Drive, Okotoks, AB T1S 1K1		
Use:	Fire & Rescue & AHS bays		
Bays:	5 Bays (3 Fire 2 EMS)	Unit Capacity:	7
Comments:	Bays 1 & 2 are rented to AHS.		

Facility Name:	Fire Station #1 (North Hall)

Fire Chief's Office	*Administration Office*
	
Training Room Kitchen	*Reception*
	

Facility Name:	Fire Station #1 (North Hall)

DFC Office

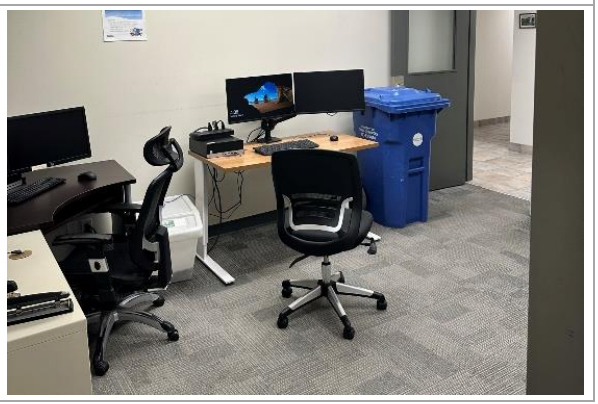
DFC Office

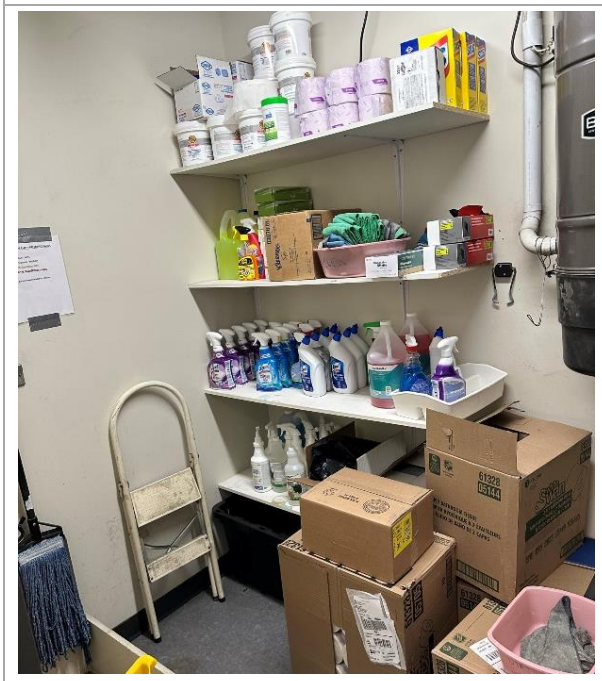
Board Room

Training Room

Captain's Office

Firefighter Office Training PCs



Facility Name:	Fire Station #1 (North Hall)
Apparatus Floor	
	
Storage	
	

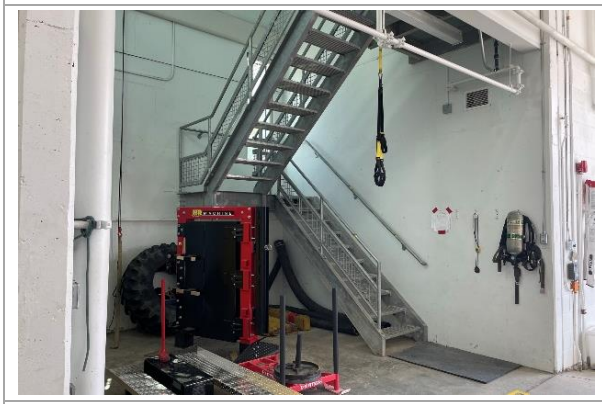
Facility Name:	Fire Station #1 (North Hall)
Maintenance	
	
	
Personal Training	
	

Facility Name:	Fire Station #1 (North Hall)
Kitchen	Day Room
	
Dorm Area	
	

Facility Name:	Fire Station #2 (South Hall)		
Address:	98 Woodhaven Drive, Okotoks, AB T18 1L2		
Use:	Fire & Rescue & AHS bays		
Bays:	2	Unit Capacity:	4
Comments:	Fire hall is attached to RCMP Detachment and Okotoks Municipal Enforcement. FRESC also work out of the building.		

Facility Name:	Fire Station #2 (South Hall)

Captain's Office	*General Office*

Facility Name:	Fire Station #2 (South Hall)
Apparatus Floor	
	
Storage	
	
	

Facility Name:	Fire Station #2 (South Hall)
Maintenance	
	
	
Personal Training	
	

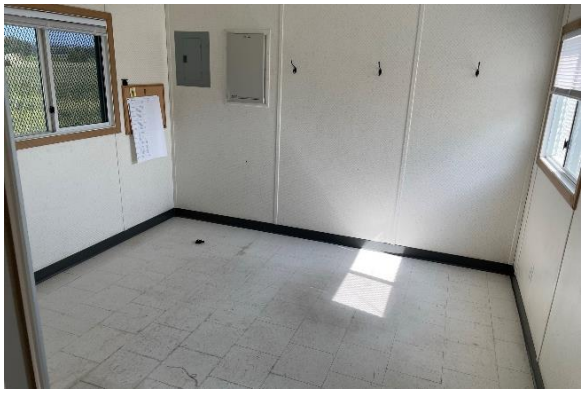
Facility Name:	Fire Station #2 (South Hall)
Lounge	*Kitchen*
	
Dorm Area	
	

Facility Name:	Training Facility		
Address:	Southbank Road East of Burnco		
Use:	Training		
Bays:	N/A		
Comments:	Training Facility with classroom, burn unit and props. Land is on a short-term lease	Unit Capacity:	N/A

Classroom & Trailer

Classroom & Trailer

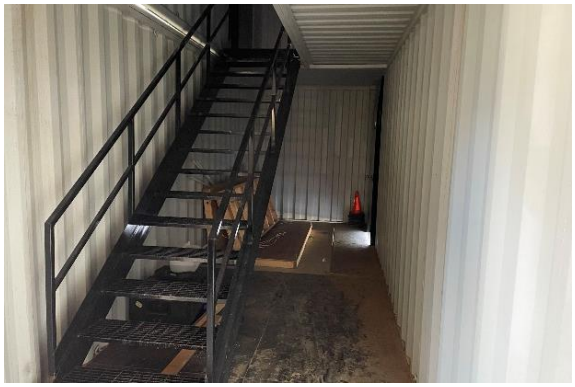
Storage



Classroom

Facility Name:	Training Facility
Burn Simulator	





3.11.1.1 Fire Stations and Training Facility Assessment

The emergency response performance of both fire station #1 and #2 is further discussed in Section 4 of this report.

Fire Station #1

Opened in 1992, Fire Station 1 has been the main station for OFR. It was designed and built with the goal of effectively meeting the needs for the fire service of the day.

Item	Description	Does have	Does not have
1	Site security	✓	
2	Fire station security monitoring		✓
3	Adequate parking for staff and visitors	✓	
4	Back-up power supply	✓	
5	Internet and intranet connectivity	✓	
6	Adequate space for practical training – training props	✓	
7	Sufficient external lighting	✓	
8	Sufficient bay area for apparatus	✓	
9	Sufficient ramp space	✓	
10	Administration office/s	✓	
11	Emergency management office	✓	
12	Administrative support office/space	✓	
13	Training room / meeting room	✓	
14	Office security	✓	
15	Dorm rooms and lockers	✓	
16	Day use area	✓	
17	Kitchen/lunchroom	✓	
18	Fitness / wellness area	✓	
19	Gender neutral bathrooms and showers	✓	
20	Space to safely garage and do minor maintenance on vehicles	✓	
22	Hose drying area	✓	
22	Small equipment storage and maintenance room	✓	
23	Air filling station room complete with proper ventilation	✓	
24	Industrial washer and dryer room	✓	
25	Bunker gear storage room complete with proper ventilation	✓	
26	Consumables storage room	✓	
27	Sufficient workstations	✓	
28	Sufficient supervisor space	✓	
29	Breakout or quiet room	✓	

Fire Station #1 Key Observations

- Shared space with AHS ambulances
- Overall building condition in good shape
- Safe vehicle egress and return
- Limited outside practical training area
- Apparatus bay is at capacity

Fire Station #2

Opened in 2014, Fire Station 2 is the more central station for OFR. It was designed and built with the goal of effectively meeting the needs for the fire service of the day.

Item	Description	Does have	Does not have
1	Site security	✓	
2	Fire station security monitoring		✓
3	Adequate parking for staff and visitors		✓
4	Back-up power supply	✓	
5	Internet and intranet connectivity	✓	
6	Adequate space for practical training – training props	✓	
7	Sufficient external lighting	✓	
8	Sufficient bay area for apparatus	✓	
9	Sufficient ramp space	✓	
10	Administration office/s	✓	
11	Emergency management office		✓
12	Administrative support office/space		✓
13	Training room / meeting room		✓
14	Office security	✓	
15	Dorm rooms and lockers	✓	
16	Day use area	✓	
17	Kitchen/lunchroom	✓	
18	Fitness / wellness area	✓	
19	Unisex bathrooms and showers	✓	
20	Space to safely garage and do minor maintenance on vehicles	✓	
22	Hose drying area	✓	
22	Small equipment storage and maintenance room	✓	
23	Air filling station room complete with proper ventilation	✓	
24	Industrial washer and dryer room	✓	
25	Bunker gear storage room complete with proper ventilation		✓
26	Consumables storage room	✓	
27	Sufficient workstations	✓	
28	Sufficient supervisor space	✓	
29	Breakout or quiet room		✓

Fire Station #2 Key Observations

- Building directly connected and adjacent to the RCMP building
- Overall building condition in good shape
- Safe vehicle egress and return
- No washrooms on the main floor
- Not enough secure parking – required to park on the street parking
- Fitness room shared with RCMP

Okotoks Training Centre

Item	Description	Does have	Does not have
1	Site security		✓
2	Lighting		✓
3	Back-up power supply	✓	
4	Adequate parking for staff and visitors		✓
5	Washrooms	✓	
6	Training room / meeting room	✓	
7	Internet and intranet connectivity		✓
8	Lunchroom	✓	
9	Bunker gear storage room complete with proper ventilation	✓	
10	Small equipment storage and maintenance room	✓	
11	Air filling area		✓
12	Wind direction indicator		✓
13	Packed gravel or paved grounds		✓
14	Adequate space for training		✓
15	Safe training props	✓	
16	hydrant		✓
17	MVI training pad		✓
18	Proper access and egress	✓	

Training Centre Key Observations

- On leased land
- Potential emergency response delay with rail traffic
- No site security
- External power supply to trailer
- Training ground requires more gravel and compaction
- Portable toilets
- No internet

The review of the OFR fire stations has indicated these facilities are meeting the current operational and administrative needs; however, any future identified improvements, enhancements, or physical location should be considered to assist with operational effectiveness.

The training facility has been a welcomed addition to conduct regular practical training to operational staff in a safe and cost-efficient manner. Further enhancements or improvements are being measured against the long-term viability of the leased land. While this property is not in the ideal location with rail traffic potentially hampering response from the site, the lack of a dedicated water source, and limited security, OFR has been making good use of this training ground. OFR administration is monitoring the lease arrangement and evaluating other considerations for a long-term location for their training facility.

3.11.2 Apparatus and Light Duty Vehicles

Fire apparatus and light duty vehicles are typically the largest capital asset expenditures for any fire department. Purchasing and managing these assets requires strong fiscal responsibility to endure public and municipal council scrutiny. Currently, OFR has significant funds invested in vehicles and equipment. The lifespan of apparatus varies depending on its type and use. Fire services typically designate a lifecycle to each piece of apparatus and contribute to a capital reserve fund to ensure enough funds are available when a replacement is needed.

Given the nature of emergency services and the reliance on safe and dependable equipment and vehicles, the need for regular, critical reviews of these assets is important to determine if the intended life cycle is both achievable and financially responsible.

Fire apparatuses are routinely utilized under extreme conditions for extended periods of time. The reliability of these critical pieces of equipment cannot be suspect. As stipulated in NFPA 1901, a front-line apparatus is required to maintain a 95% in-service status.

In addition to maintaining a current fleet capable of providing reliable service, meeting the ULC guidelines favorably impacts municipal insurance ratings. While the life expectancy of any piece of equipment or vehicle is contingent on proper use, maintenance and repair, fire apparatus life cycles are subject to adjustments more frequently than normal service vehicles. Annual reviews of all apparatus in OFR, including mileage, call volume, maintenance records, testing results and salvage values should be carefully done with subsequent adjustments to the original life cycle, whether reduced or extended as warranted.

A summary of the current OFR fleet including major apparatus and light duty vehicles is attached as Appendix F.

3.11.2.1 Apparatus and Light Duty Vehicle Assessment

The required Alberta commercial vehicle tests and certifications are completed by fleet services. Annual pump tests along with the aerial ladder tests and certifications are completed each year as required through a third-party vendor.

The 2002 Superior pumper did not pass the required pump test in 2022 and is not being utilized as a front-line apparatus. This unit is scheduled to be removed and replaced in 2024.

OFR apparatus operators conduct pre-trip inspections at the beginning of their shift along with post trip inspections, as necessary. All records of these inspections are captured in the records management software. Any significant deficiencies will have the specific piece of equipment placed out of service until repaired.

Observation #18: There are areas within the OFR response zone that are not connected to the municipal fire hydrant system and rely on water for firefighting being brought in. OFR is equipped with a water tanker to provide an additional water supply into those areas as part of the response fleet. The current OFR water tanker with an 8000-litre tank capacity is insufficient to provide un-interrupted water supply for an effective fire attack.

Recommendation #18: Develop a fire suppression water delivery plan for response zones without available fire hydrants that ensure an uninterrupted water supply.

Suggested completion: *12 - 24 months*

Cost: *To be determined. (based on the results of the recommended plan)*

Resource: *OFR Capital Budget*

Rationale: *The Fire Underwriters Survey identifies that an Accredited Superior Tanker Shuttle Service is a recognized equivalent to a municipal fire hydrant protection system if it meets all the requirements for accreditation. In areas without municipal water supply, a fire service should consider a water servicing strategy or formal plan for those areas requiring water flow for firefighting.*

This plan would identify, and address the water volumes necessary, including internal and external resources. (i.e., appropriately sized OFR water tender and other apparatus, mutual/automatic aid, and private water shuttle services) to address the risks identified in those response zones.

3.11.2.2 NFPA Standards for Fire Apparatus

NFPA has developed standards to assist a fire service with the design, maintenance, inspection, testing, life cycling and disposal of its fire apparatus. Fire departments may choose to adopt these standards or utilize them as a reference in their standards and practices.

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

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

In the last 10 to 15 years, much progress has been made in upgrading functional capabilities and improving the safety features of fire apparatus. Apparatuses more than 15 years old might include only a few of the safety upgrades required by the recent editions of the NFPA fire department apparatus standards or the equivalent Underwriters Laboratories of Canada (ULC) standards. Because the changes, upgrades, and fine-tuning to NFPA 1901 have been truly significant, especially in 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 have been properly maintained and that are still in serviceable condition be placed in reserve status; be upgraded in accordance with NFPA 1912; and incorporate as many features as possible of the current fire apparatus standard (See Section D3 of Standard). This will ensure that, while the apparatus might not totally comply with the current editions of the automotive fire apparatus standards, many of the improvements and upgrades required by the current editions of the standards are available to the 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.

Underwriters Laboratories of Canada

Current ULC[15] 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 5, some emergency vehicles' life cycles can be extended due to low usage or serviceable conditions. A leading practice is to have a complete condition survey conducted to determine if there is a usable life cycle remaining. This condition survey 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.

The FUS provides insurance grading that may have a direct implication to fire insurance rates with a community. Part of this grading includes the assessment of all fire apparatus. To maintain a favorable protected grading, it is recommended at Section 3.11.2.5, that OFR amend the current life cycle replacement policy to comply with ULC, NFPA and FUS requirements.

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

Table 5: Fire Apparatus Service Schedule (Fire Insurance Grading)

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

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

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

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

- a populated area (or multiple areas) with a density of at least 400 people per square kilometre; 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 kilometre; 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 kilometre; AND
- does not have a total population more than 1,000.

3.11.2.3 Fire Apparatus Design and Procurement

Fire apparatus is designed and tendered based on the unique requirements of the fire service and the needs of the community it serves. With the design, tender and procurement processes typically taking two to three years or longer in conjunction with the expected life cycles of these apparatus of 20 years or more, it is important initial decisions accurately reflect immediate and future needs.

OFR response areas have significant variance in the risks and needs of demand zones. Fire apparatus and other response vehicles must be designed to meet these differing demands for protection of all areas. As new apparatus is very costly and forecasted to last 15- 20 years or more, a good practice is to involve all stakeholders when designing and specifying these vehicles.

Observation #19: Through interviews and survey results, concerns were expressed regarding the reliability and functionality of some OFR apparatus. These concerns include the previous issues with the foam delivery systems, the ongoing service reliability of the two bush buggies units, the limited operational capacity of the current rescue boat, and concerns about the ladder truck's limited reach into newer developments.

Recommendation #19: Review all apparatus for functionality and reliability, including maintenance records, to ensure all apparatus are operating at peak performance.

Suggested completion: *1 - 12 months*

Cost: *TBD (Based on estimate of repairs or replacements required)*

Resource: *OFR Capital Budget*

Rationale: *The functionality and reliability of all apparatus are critical to the overall effectiveness of the fire service. An annual review of each apparatus and light vehicle should be completed to determine if they currently meet operational requirements and anticipated needs for the life cycle of the apparatus or vehicle. An annual review of each piece of OFR apparatus and equipment including their intended use within the community would assist in maintaining a functional fleet.*

3.11.2.4 Fire Apparatus Maintenance and Repair

All commercial vehicles operating on Alberta highways, including firefighting vehicles registered for 11,794 kg or more must meet certain legislated and regulatory requirements regarding vehicle maintenance and record keeping and are required to be compliant with all the rules and regulations as contained in the Province of Alberta Traffic Safety Act – Commercial Vehicle Safety Regulation. Maintenance and inspection programs under the Act must be in writing and provide a continuous and regular program for the inspection, maintenance, and repair.

A sound and reliable preventative maintenance program is a vital component of the overall fleet management process ensuring each piece or equipment operates reliably, safely, and effectively while aiding in maximizing its life cycle. Poor maintenance scheduling or neglect on required checks and repairs can lead to accidents, breakdowns, and life-safety issues. A fire apparatus pre-maintenance program (PM) should consist of the flowing components:

- Trip inspections (daily, pre-trip, post trip)
- Regular PM scheduling
- Annual PM comprehensive check

Daily inspection sheets and post trip inspections are completed and forwarded to an assigned captain to ensure any necessary repairs are made as soon as possible. Recommended service schedules, testing and certifications are coordinated with OFR administration to ensure compliance with as little disruption to service as possible.

Emergency vehicle maintenance, testing and repairs required specialized certifications. The industry recognized certification is an Emergency Vehicle Technician (EVT).

A fire service has options available for consideration to facilitate the specialized maintenance, testing, and certification requirements on components of the various fire apparatus. The most common, include:

1. Utilize existing municipal fleet repair facilities and personnel that may include qualifying one or more municipal fleet mechanics to EVT
2. A dedicated fire fleet facility within the municipality utilizing dedicated EVT mechanics
3. Contract basic fleet maintenance to a local repair facility
4. Contract out to 3rd party vendors with the necessary Emergency Vehicle Technician (EVT) qualifications
5. Hire or upgrade one or more firefighters with EVT designation

Depending on internal constraints and considerations, a fire service may utilize a hybrid of these options. As an example, the fire service may utilize an internal firefighter EVT to provide simple vehicle repairs and adjustments, conduct testing and certification, while municipal fleet may provide basic automotive repair, and further contracting advanced technical repair and testing and certifications to a qualified 3rd party.

Observation #20: OFR relies on a 3rd party vendor to conduct the required tests, maintenance, and certifications on all pump-capable apparatus and aerial devices. This often requires the apparatus to be taken out of service and out of the service area that could result in extended out-of-service time.

Recommendation #20: Evaluate the feasibility of developing a workable hybrid vehicle repair, testing and repair model that is efficient and effective for the unique needs of OFR.

Suggested completion: *12-24 months*

Cost: *TBD (Cost to train, certify, and equip to EVT certification)*

Rationale: *Specialized levels of training and certification are necessary to test, repair and certify certain components of fire apparatus on a yearly basis. For OFR, this currently requires bringing in specialized mechanics (EVT) or taking their apparatus to the vendor to perform these tasks requiring advanced planning, or subject to delays in necessary repairs.*

For example, OFR may utilize one or more internal firefighter EVTs to provide simple vehicle repairs and adjustments, conduct testing and certification, while municipal fleet may provide automotive repair, and further contracting advanced technical repair and testing and certifications to a qualified 3rd party.

3.11.2.5 Fire Apparatus Replacement and Dispersal

The process for determining the appropriate dollar value required to be placed in the reserve fund ensures sufficient monies are available at the time of replacement. This is based on the identified life cycle, forecasted inflation, depreciation, and salvage value of current assets. Calculating the yearly contributions is based on the number of years of expected life in the fleet inventory. Although both NFPA and FUS have criteria on re-classifying or retiring apparatus, modifications or upgrades may be required based on age or heavy usage. For example:

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

In review of 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. The table below shows an example of an apparatus purchased in 2014 with a 20-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 6: 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

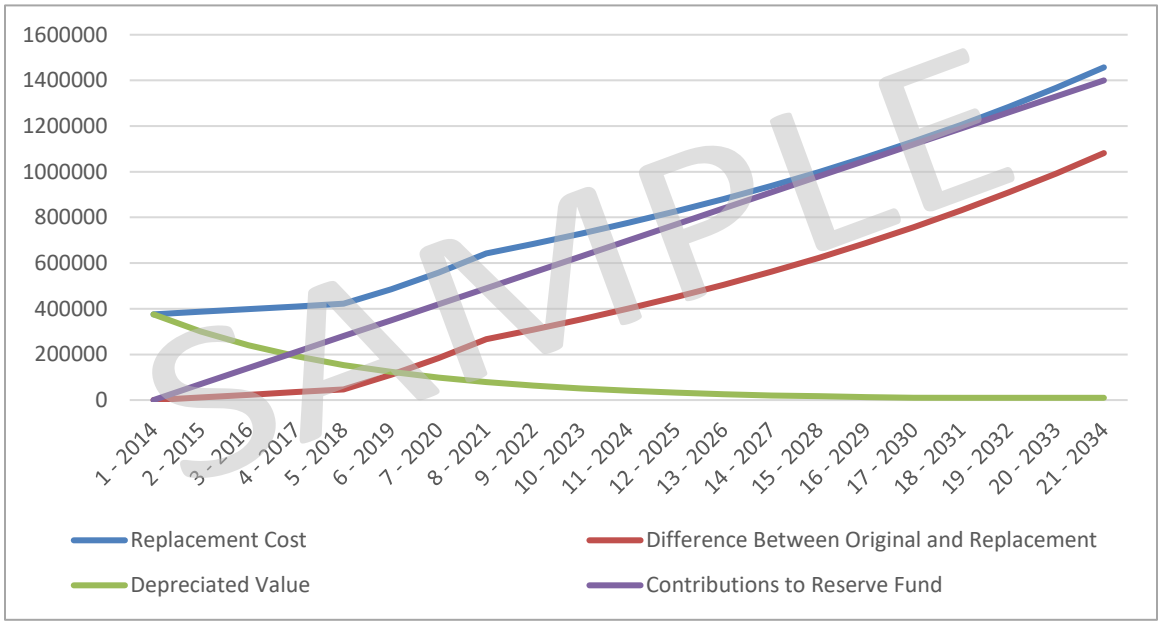


Table 6 and Figure 5 show that the monies put into the replacement reserve fund are close to the projected replacement cost in year 15 and require additional contributions to extend past. Note the following key points:

- 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

OFR maintains a policy for the replacement of apparatus, light vehicles, and fire equipment, and has been making a conscious attempt to extend the life of their assets. Working together with finance, a standard fleet replacement schedule has been developed (see Table 7*).* Annual capital contributions are put into a reserve fund for the anticipated apparatus, equipment, and PPE replacement needs. The practice of conducting annual reviews on all OFR vehicles should include:

- Historical Apparatus Usage
- Maintenance And Certification Records
- Mileage and annual condition survey
- The original purchase price
- Expected useful life
- Inflationary factor
- Replacement apparatus specifications
- Replacement apparatus cost
- Salvage value

Table 7: OFR Apparatus and Light Vehicles with Planned Replacement Schedule

No.	Location	Unit Number/Name	Year	Est. life expectancy (yrs.)	Est. year replacement
1	Station 1	Unit 1004 (E83) Superior Engine	2001	20	2024
2	Station 1	Unit 1008 (8 Romeo) Ford Engine	1988	N/A	N/A
3	Station 1	Unit 1010 (L81) Rosenbauer Ladder	2007	20	2026
4	Station 1	Unit 1012 (8C) GMC Yukon	2023	12	2032
5	Station 1	Unit 1013 (E81) Pierce Engine	2012	20	2032
6	Station 1	Unit 1014 (B81) Ford F550	2012	7-10	2032
7	Station 1	Unit 1016 (8 Delta) Ford F150 Pick-up	2013	12	2024
8	Station 1	Unit 2017 (JB8) Ford Pick-up	2015	15	2030
9	Station 1	Unit 2018 Command Trailer	2015	18	2033
10	Station 1	(8 Bravo) Ford F250 Pick-up	2017	12	2027
11	Station 1	Outlaw Jet Boat	2015	N/A	N/A
11	Station 2	Unit 1003 (B82) Ford F550	2004	20	2024
12	Station 2	Unit 1015 (T82) Kenworth Tanker	2013	20	2033
13	Station 2	Unit 1020 (8W) ATV	2018	N/A	N/A
14	Station 2	Unit 1021 (E82) Pierce Engine	2021	20	2041

Observation #21: OFR administration is attempting to replace all heavy apparatus based on a 20-year life cycle. The goal is to establish a 15-year frontline schedule with 5 years in reserve as second line. This is consistent with the NFPA 1911 and the FUS body reporting to the Canadian General Insurance (CGI).

There was a considerable concern expressed in both the interviews and surveys regarding the suitability and reliability of the two bush buggies. As well there is concern that the current aerial device is not long enough to meet the operational requirements. Interview feedback has indicated the current rescue boat is not ideal for the water risk areas that OFR may be requested to provide service.

Recommendation #21: Conduct annual condition and suitability assessments of each apparatus and light vehicle including watercraft and amend capital asset replacement plan as necessary.

Suggested completion: *1 - 12 months*

Cost: *TBD*

Resource: *OFR Capital Budget*

Rationale: *It is advantageous to annually review operational requirements and update the expected life cycles for all apparatus and vehicle including salvage values and replacement funding estimates to ensure the necessary complement of safe, effective, and dependable apparatus and other emergency vehicles.*

3.12 Ancillary and Firefighting Equipment

Equipment needed for field response operations such as vehicle extrication tools, hand tools and fans are examples of equipment required to meet the needs of OFR. Ancillary equipment should be designed and maintained to meet the department's current core service, goals, and objectives. OFR's current inventory of ancillary equipment is appropriate for the services provided. This equipment is typically tools such as chain saws, hose wrenches, pry bars, axes, wedges, hand-held thermal imaging cameras and mounted and portable lighting. As the response needs change or grow, additional equipment to match the service must be considered.

The fire service relies on dependable equipment that is appropriate and in proper working order for the safe and efficient delivery of services. This equipment is utilized under extreme conditions and its dependability cannot be compromised. Much of this equipment is required to be tested and certified regularly.

OFR has processes established to ensure that the required maintenance, certifications, and replacements are done as required. The equipment that is utilized by OFR appears to be appropriate and sufficient for normal operations.

3.13 Personal Protective Equipment

OFR 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.

All firefighters are expected to clean and do a gross decontamination of their PPE after a fire or other incident that causes exposure to carcinogens or other health hazards. 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 is the recognized reference for the care and maintenance of these important pieces of protective gear.

The importance of properly cleaning and maintaining each firefighter's PPE cannot be overstated. The hazards of off-gassing and absorption of contaminates is a significant health hazard for firefighters. A thorough cleaning, inspection, and repair as necessary is to be completed at least twice annually. A third-party provider performs the annual testing, deep cleaning, and repair of all bunker gear.

At any time should the integrity of any piece of PPE be in question it must be replaced and taken out of service. Recent fire industry initiatives have included:

- Designing new and renovated fire stations with a specific room with proper storage and air handling for firefighter PPE decreases the potential exposure to contaminants in the apparatus bay and living quarters.
- Discouraging the past practice of transporting their PPE in their personal vehicles for the same reason.
- Issuing a second set of bunker gear for use when the primary set is contaminated or in need of repair.
- Installing commercial washers/extractors and dryers for firefighters to clean their bunker gear and station wear, rather than taking it home.
- Utilizing appropriate software to track the initial issue date, cleaning and repairs and replacement/retirement of all PPE.
- Updated policies and procedures that include the necessary responsibilities for the proper care and maintenance of all PPE.

The protective equipment provided to OFR firefighters is appropriate and designed to meet the department’s safety goals and objectives. OFR has assigned the PPE portfolio to one of the captains who assists with tracking initial issue dates, repairs, cleanings, and replacements. OFR has also implemented a program that builds on its PPE inventory with the goal of having two complete sets for every firefighter.

3.13.1 Self-Contained Breathing Apparatus (SCBA)

SCBA are essential pieces of firefighting equipment that allow firefighters to safely work within environments that would otherwise be uninhabitable. SCBAs consist of a harness, regulator, face piece and down person alerting system along with inter-changeable air bottles that typically provide breathing air for half-hour to 45 minutes.

All components of the SCBA must be tested and properly maintained. An accurate history of in-service dates, testing, maintenance, and repairs must be kept. Simple maintenance can be done by the firefighters; however, more complex repairs and certifications need to be completed by a certified SCBA technician. OFR has an outside company conduct all necessary testing and complex repairs of their SCBA.

There appears to be enough SCBA to conduct an effective and safe response. The inventory of air bottles seems sufficient for most incidents, however, on larger incidents not every firefighter may be able to secure an SCBA and firefighters may run out of available filled bottles. OFR has its own certified SCBA air bottle filling station at the station for filling their air bottles as necessary.

OFR has established a life cycle schedule for the air packs and components that is included in their capital reserve budget.

3.14 Specialized Rescue Equipment

Effective and efficient response to an incident requires vehicles or in the case of water emergencies, watercraft that are suitably equipped and designed for a specific purpose. OFR responds with specialized equipment to incidents involving motor vehicles, Hazmat/DG incidents, technical rope rescue, confined space, ice rescue, water rescue and wildland interface fires. Typically utilizing their pumpers, rescue, and/or bush trucks for the immediate response, specialized equipment is kept on the apparatus or in-station in anticipation of the known risks in each response zone.

A deputy chief is responsible for managing the equipment needs of the service and utilizes one or more captains to assist with this portfolio. Equipment needs and issues are discussed at captain meetings. Concerns and recommendations are then directed to the fire chief and discussed at the regular chief meetings.

3.14.1 Rescue Tools

Rescue tools consist of equipment as simple as crow bars or small hand tools up to and including heavy rescue cutters, spreaders, and lift bags. In many cases, at most motor vehicle incidents requiring extrication, having this equipment readily available and operating properly is truly a matter of life and death.

There is a variety of hand tools carried on each pumper, while the heavy rescue tools are carried on the rescue truck and appear sufficient for the immediate needs.

3.14.2 Wildland Firefighting

Equipment specifically designed for wildland firefighting is typically lighter and more portable. Hose packs, water packs, and other light duty firefighting tools need to be transported by light vehicle, or on foot in some cases under extreme terrain and conditions.

OFR wildland gear appears to be suitable and sufficient for immediate needs. Additional equipment and resources can be brought in through mutual aid should it be needed.

3.14.3 Water Rescue

OFR has a rescue boat in their inventory that was intended to meet the anticipated needs for water rescue. The training is currently being delivered via a train-the trainer process and delivered in-house. Interview results have shown that the current rescue boat is not the best fit for the bodies of water they may be called to respond to. The rescue boat was discussed in Section 3.11.2.3 of this report. Supplemental equipment such as life preservers, poles and ropes are carried or otherwise available for water rescue.

3.14.4 Ice Rescue

Ice rescue incidents are extremely risky to responders. The thickness of ice may or may not support the body of a rescuer. Special training, techniques, and rescue tools such as inflatable rescue boats and lifelines are common equipment for a fire service that are posed with this type of risk in their community. OFR has minimal training and equipment to respond to this type of incident.

3.14.5 Dangerous Goods Response

OFR is trained and equipped to manage dangerous goods incidents at the operations level. The equipment that is typically required for this level of dangerous goods response includes air monitoring equipment, diking, patching and absorbent material, and propane flaring burner. OFR maintains enough equipment for minor dangerous good incidents. Larger incidents would require additional resources through automatic or mutual aid agreements currently in place.

3.14.6 Low-Angle Rescue

Low-angle rescue situations typically require specialized equipment designed for difficult retrievals. Typical tools are a rescue basket and appropriate rope with a type of haul system for both the patient and the rescuers.

While it is impossible for a fire service to anticipate every type of emergency response, having appropriate equipment and training to provide the level of service safely and effectively within their defined scope of duties is what should be considered as the minimum.

OFR has a broad range of expectations defined within their scope of work. The equipment required to provide these services safely and effectively is sufficient and appropriate. An ongoing review of necessary equipment for expected service levels will assist the fire chief in requesting any equipment needs through the appropriate budget process. OFR has the minimal equipment and training to provide low angle rescues safely and effectively.

3.15 Rehabilitation and Decontamination

During and after an emergency event that involves significant physical effort and exposure to potentially harmful toxins, a protocol to ensure proper medical monitoring, rest and decontamination is critical to the health and welfare of the firefighters. Areas away from the immediate danger zone that provides shelter and amenities to accomplish these goals can be achieved by utilizing nearby physical structures where available. Other times suitable facilities are not available. The utilization of a dedicated rehab vehicle provides multi-functional capacity that can be added to the inventory.

Observation #22: OFR has procedures and protocols for medical assessments, rehabilitation, and decontamination of firefighters during and after events such as fires, dangerous goods, or other significant incidents. However, they do not have a dedicated rehab/decontamination unit that is appropriate to be used in these cases, but rather rely on ad-hoc ways of managing these tasks. There is a requirement for firefighter safety the Alberta Occupational Health and Safety Guide for Firefighting, NFPA 1584 Standard on the rehabilitation process for members during emergency operations and training exercises and NFPA 1580 Standard for Emergency Responder Occupational Health and Wellness.

Funds were allocated before the covid pandemic; however, the purchase was put on hold with supply chain issues, availability, and cost increases. The cost of this vehicle exceeded the initial budget allocation and will need to be established with realistic build time for a renewed capital request.

Recommendation #22: Revive the pre-covid process of purchasing an appropriate rehab/decontamination unit by confirming unit specifications and re-submitting an updated capital request.

Suggested completion: *12 - 24 months*

Cost: *Cost to be determined (Cost dependant on specifications and manufacturer)*

Resource: *OFR Capital Budget*

Rationale: *OFR requires a proper rehab/decontamination unit. The ability to have a dedicated vehicle able to facilitate rest, medical assessment, and decontamination of firefighters during, after and before leaving the scene of a significant incident or training activity will maintain the health and safety of firefighters. This action will conform to Alberta OHS and NFPA 1580 Standard for Emergency Responder Occupational Health and Wellness.*

3.16 Asset Management

The Okotoks Administrative Guideline A19-10 "To establish a framework for asset management practices" is the guiding document that has established the current asset management program. This guideline is currently under re-development.

OFR is utilizing fire industry proprietary programs for their asset management and records management. Together with the town, administration will determine the future direction for their asset management and records management processes.

3.17 Municipal Comparative Analysis

Comparing the Okotoks Fire & Rescue Service (OFR) to the fire services of similar size/types of Alberta's medium-sized urban municipalities is a practical way to identify relative service types, levels, costs, risks, and trends. It must be noted that all communities have different attributes such as risk factors, service levels, geography, response types and community profiles. For this reason, the comparative analysis should be used as a base reference, not a suggestion or intention of something to be replicated in Okotoks. These benchmarks include department type, budgets, service areas, service levels, and staffing levels.

For the purposes of this municipal comparator review, we used 2019-2023 information to obtain common information from each municipality. 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 those goals. Therefore, there are no ideal or identical comparators for OFR. The main criteria for collecting information were:

- Population
- Budgets
- Department Size
- Type (full-time, part-time or combination)
- Department Staffing
- Service Levels

Additional information gathered for general evaluation was:

- Number of fire stations
- Call volume
- Call types

Table 8: Participating Community Comparatives

Community	Population	Land Area (km^2)	Area of Response (km^2)
Town of Okotoks	30,405	39.04	374
City of Airdrie	80,649	84.5	84.5
Town of Cochrane	34,724	31.58	31.58
City of Leduc	35,000	42.0	346
City of Lloydminster	31,582[16]	42.04	42.04
City of Spruce Grove	38,985	32.37	32.37
City of Grande Prairie	67,670	132.71	132.71

3.17.1 Department Profile

Table 9 shows department profile, staffing models and levels of service are based on community risk, risk tolerance and the ability for a community to pay for and sustain desired service levels.

Okotoks Fire & Rescue - Operating out of two stations, Okotoks Fire & Rescue is a composite fire department (consisting of career/fulltime and part-time members) serving the Town of Okotoks and a designated portion of Foothills County. OFR provides medical co-response within its service area as per agreements with AHS and all firefighters are EMR, PCP or ACP certified. Full time firefighters are required to maintain their PCP certification. OFR does not have any staff dedicated to inspections, investigations, or training.

Airdrie Fire Department – The Airdrie Fire Department (AFD) is a fulltime career department that currently operates out of three stations with a 4th station under development in 2024. AFD provides a broad range of fire, rescue, medical and fire prevention services to the community and its mutual aid partners. AFD employs a total of 72 full-time firefighters, along with various support staff lead by a dedicated leadership team.

Cochrane Fire Service – Operating out of one station, is a full-time career fire department serving the Town of Cochrane with fire and rescue services as well as Medical First Responder support to AHS. The department has two full-time Safety Codes Officers.

Leduc Fire Service – Operating out of two fire stations, is a composite (career/fulltime and paid-on-call members) integrated fire and ambulance service which provides fire and rescue services as well as Advanced Life Support Emergency Medical Services under contract with Alberta Health Services. Fire response outside the city is limited and mainly consists of incidents along the QE II Highway.

[16] *Includes combined information for Alberta and Saskatchewan*

Lloydminster Fire Department – Operating out of two stations, is a composite (career/fulltime and paid-on-call members) fire and rescue department serving both sides of the 'Border City'. One station is staffed 24/7 with 2 fulltime and 2 part-time members and the other station schedules and compensates 6 part-time members to be on-call and available for each 24-hour period. The 24/7 crew respond to all calls and the on-call crew responds to all second alarms. A third alarm will be a call out to all members.

Spruce Grove Fire Service – Operating out of one station, is a full-time career integrated fire and ambulance service which provides fire and rescue services in addition to Advanced Life Support Emergency Medical Services under contract with Alberta Health Services. Fire response outside the city is limited and mainly consists of incidents along the Yellowhead Highway.

Grande Prairie Fire Department – Operating out of three stations as a full-time career department, the Grande Prairie Fire Department (GPFD) provides a broad range of fire, rescue, fire prevention and PSAP/911 dispatching services. GPFD employs a total of 93 full-time firefighters, fire prevention officers and dispatchers, plus 10 casual dispatching staff. At any given time, a minimum of 13 firefighters and equipment are deployed from three stations strategically located across the city.

Table 9: Community Comparative Departments' Profile

Community	Department Type	Union	No. of Stations	Total Staff	Fire Chief	Deputy Chief	Support Staff	Suppression Staff	Fire Prevention	Training Staff	Dispatch	Mechanical (FT)	Other
Town of Okotoks	Composite	Yes	2	50	1 FT	2 FT	1 FT 1 PT	36 FT 8 PT	0	0	0	0	0
City of Airdrie	Full-time	Yes	3	85	1 FT	3 FT	4	72	4	1	0	0	0
Town of Cochrane	Full-time	No	1	49	1 FT	1 FT	1 FT	44 FT	2 FT	0	0	0	0
City of Leduc	Composite	Yes	2	77	1 FT	2 FT	4 FT	40 FT 30 PT	2 FT	1 FT	0	0	1 Business Analyst
City of Lloydminster	Composite	Yes	2	53	1 FT	2 FT	1 FT	8 FT 40 PT	1 FT	1 FT	0	0	0
City of Spruce Grove	Full-time	Yes	1	66	1 FT	3 FT	4 FT	56 FT	1 FT	ADC	0	1 FT	0
City of Grande Prairie	Full-time	Yes	3	108	1	2	3	70	4	2	25		1

FT: Full-time PT: Part-time POC: Paid-On-Call ADC: Assistant Deputy Chief

3.17.2 Budgets

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

Table 10: Community Comparative Budget Ranking

Community	Municipal Budget 2022	Emergency Services Operating Budget	% of Municipal Budget	Net Cost Per Capita
Town of Okotoks	$66,963,000	$6,737,120	10.06	$221.58
City of Airdrie	$207,200,000	$17,600,000	8.5	$207.66
Town of Cochrane	$74,300,000	$7,134,200	9.6	$206.00
City of Leduc	$121,700,000	$12,400,000	10.19	$354.00
City of Lloydminster	$107,646,534	$4,140,618	3.85	$134.28
City of Spruce Grove	$80,959,000	$11,224,969	13.87	$287.93
City of Grande Prairie	$194,558,009	$16,984,617	9	$251.00

Town of Okotoks – Fire Service Cost per Capita	$221.58
Sample Mean/Average – Fire Service Cost per Capita	$215.02
Sample Mean/Average – Fire Service % of Municipal Budget	8.59%
Sample Median – Fire Service Cost per Capita	$213.79
Sample Median – Fire Service % of Municipal Budget	9.83%

The seven surveyed fire services have operating budgets within the range of $4.1M to $17.6M annually. OFR occupies #4 of 7 for cost per capita and #3 of 7 of the percentage of the municipal budget spent on fire services, of all the municipalities surveyed at $221.58 per person and 10.06% of Okotoks' operating budget, respectively.

The percentage of the municipal budget for all fire services surveyed ranges from 3.85% to 13.87% of municipal operating budgets, and the cost per capita of these departments ranges from $134.28 to $354.00. The OFR's operating budget and cost per capita are within the middle-upper range of similarly staffed/operated fire services surveyed.

3.17.3 Industry Standards

Table 11: Community Comparative Standard of Cover

Community	Standard of Cover/ Level of Service	Standard of Cover/ Level of Service approved by Council	Is the standard/level based on a leading practice such as NFPA 1710/ 1720 and/or the Alberta OHS Regulations for firefighters?
Town of Okotoks	Y	Y	Y [a]
City of Airdrie	Y	Y	Y [a, c]
Town of Cochrane	Y	Y	Y [b, c]
City of Leduc	Y	N	Y [a, c]
City of Lloydminster	Y	Y	Y [a]
City of Spruce Grove	Y	Y	Y [b]
City of Grande Prairie	Y	Y	Y [b]

Notes:

[a:] *Based on NBC (AB) 10 minutes*

[b:] *CFS notes that it meets the staffing levels of NFPA 1710/1720 with the assistance of mutual aid.*

[c] *Operations based on NFPA 1710*

3.17.4 Response Data

For this municipal comparator analysis, we used 2019–2023 information from each community. Breakdowns are divided into the following two categories:

Table 12: Examples of Incident Types for Statistical Analysis

Incidents by Type		
EMS Related Calls		
Call Types	Pre-Hospital Care: Alfa, Bravo Charlie Delta Echo	
	Lift Assist	
	False Alarms	
Fire-Related Calls		
Fire Emergency	Alarm Burning Complaint Structure Fire Minor Fire Smoke	Car Fire Re-check (hot spots) Wildfire – Grass, Brush, Outdoor Oven/Pot on Stove Explosion
MVI (Motor Vehicle Incident), aka MVI	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 13: Municipal Comparative Response Call Volume (2019 – 2023)

Community		Okotoks	Airdrie	Cochrane	Leduc	Lloydminster	Spruce Grove	Grande Prairie
Total Call Volume Statistics	2019	1056	1778	978	6332	558	5208	5475
	2020	1016	1791	925	5942	642	5215	2856
	2021	1120	1934	1021	7711	783	7393	3642
	2022	1263	2395	1167	8459	930	8206	4252
	2023	1290	2448	1263	8111	1019	3704	4970
	Average	*1149*	*2069*	*1071*	*7311*	*786*	*5945*	*4239*
Rank by Average Most to Least		**5**	**4**	**6**	**1**	**7**	**2**	**3**
Fire / Rescue Related Calls	2019	558	828	423	2094	519	523	1602
	2020	597	907	426	1743	593	512	1520
	2021	625	966	469	2445	675	599	1563
	2022	672	1165	518	2867	806	572	1823
	2023	704	1177	620	2857	906	693	2102
	Average	*631*	*1009*	*491*	*2401*	*700*	*580*	*1722*
Rank by Average Most to Least		**5**	**3**	**7**	**1**	**4**	**6**	**2**
EMS Related Calls	2019	458	950	555	4238	39	4679	3873
	2020	419	884	499	4199	49	4711	1336
	2021	495	968	552	5266	108	6793	2079
	2022	591	1230	649	5592	124	7604	2429
	2023	614	1271	643	5254	113	3011	2868
	Average	*515*	*1061*	*580*	*4910*	*87*	*5360*	*2517*
Rank by Average Most to Least		**6**	**4**	**5**	**2**	**7**	**1**	**3**

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

SECTION 4
RESPONSE STATISTICS AND PERFORMANCE STANDARDS

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 Okotoks. Activity outside of the Town limits was not included in this section unless specifically identified in a particular section.

4.1 Industry Standards and Alberta Fire Service Legislation

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.

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 2019 National Building Code of Canada – Alberta Edition (NBC-AE2019) 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 Alberta building codes 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.

4.1.3 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 Version 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 of Canada – Alberta Version, 2019. NFPA standards were developed for firefighting operations and response performance objectives for career fire departments such as Okotoks Fire & Rescue. The standard addressing fire department operational performance and service levels is NFPA 1710: Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career 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.

4.2 Current and Future State for Response and Effective Response Force

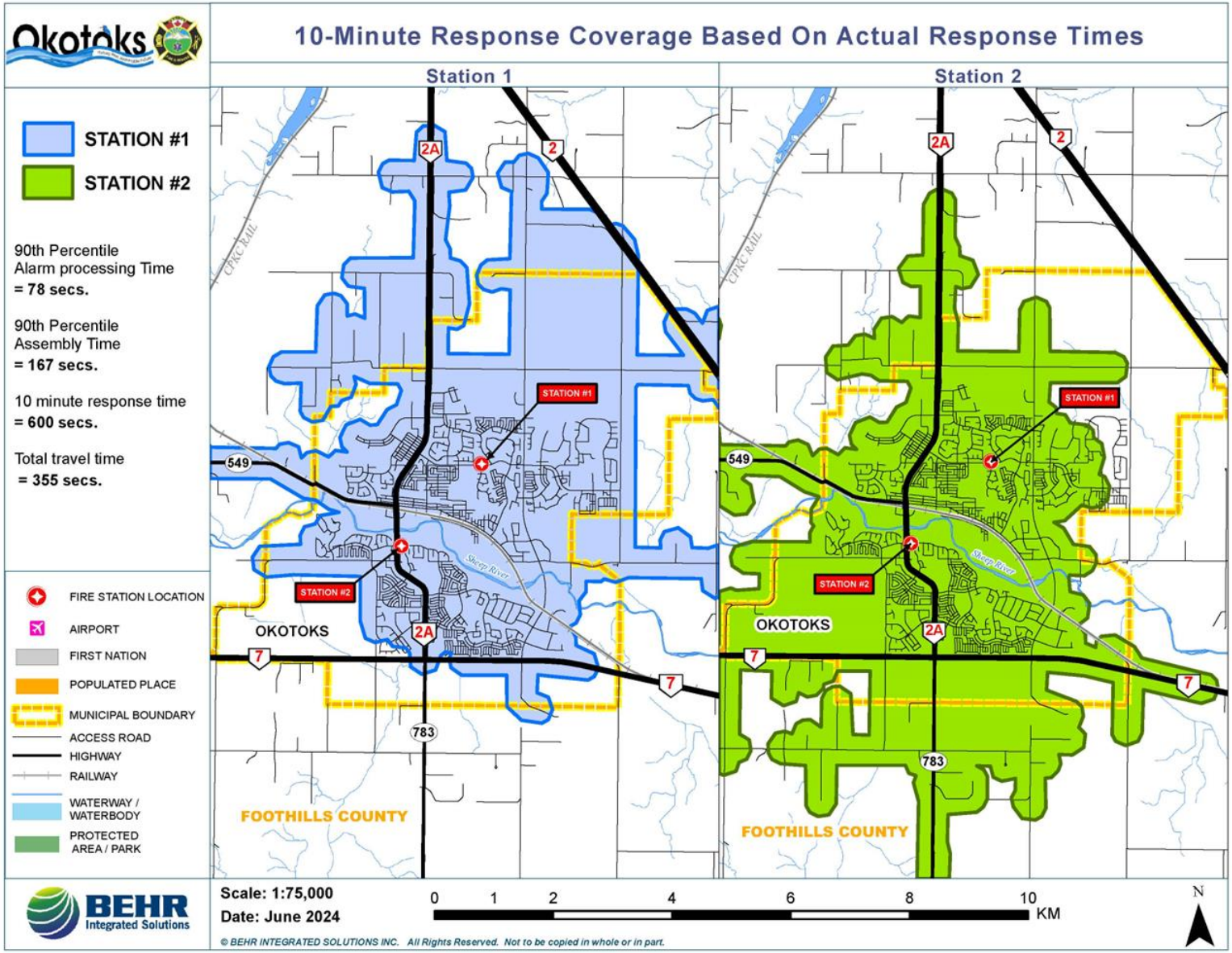
This section will examine the municipality's current state and provide recommendations on future state to support increased levels of service to address public and firefighter safety, risks identified and meeting the town's needs and circumstances.

4.2.1 Current State

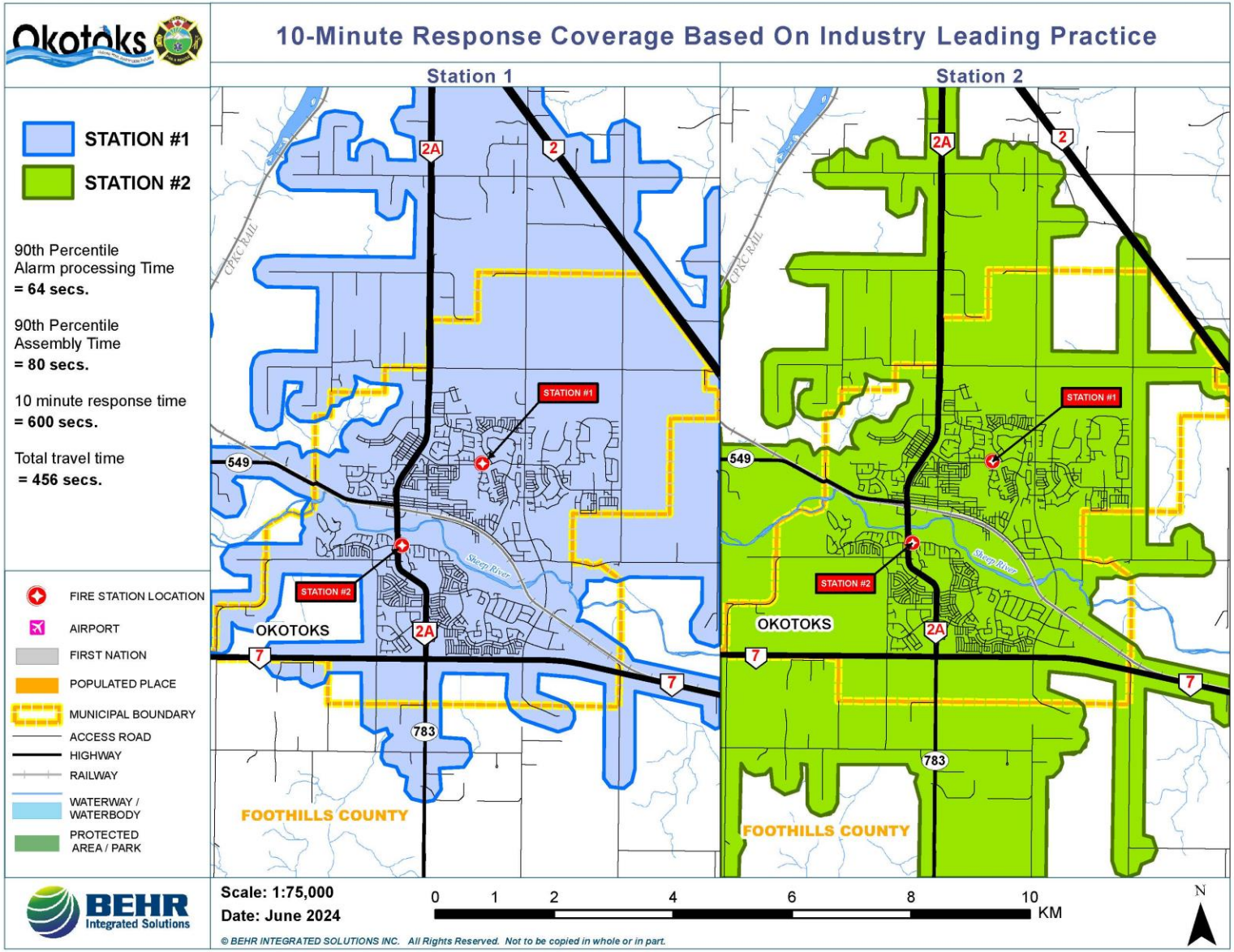
OFR is staffed with 36 full-time firefighters (including 8 Captains) and 8 community firefighters. The department operates from 2 fire stations, located on opposite sides of the river and rail tracks. Each station is staffed 24 hours and operates on a 4-platoon system with 7 firefighters and 2 Captains assigned to each platoon. The department has assigned 3 firefighters and 1 Captain to each platoon at the north station and 4 firefighters and 1 Captain to each platoon at the south station. OFR utilizes the part-time community firefighters to supplement the full-time staff during holidays and other leaves, as well as callback for larger incidents. As noted in Section 3, the community firefighter program is not functioning as needed, and obtaining community firefighters has been difficult. This has resulted in the department operating fire stations with 3 firefighters at each station for most of the shifts.

The current structure of 2 stations is located to optimally meet the 10-minute approved response time to the 90% of the time criteria, as illustrated in , which indicates the current state. Map 3: 10-Minute Response Coverage Based on Leading Practice further identifies how OFR could improve response times if they are able to improve alarm processing and assembly time to meet the industry standards. These improvements would provide a greater 10-minute total response for each of the 2 stations.

Map 2: 10-Minute Response Coverage Based on Actual Response Times



Map 3: 10-Minute Response Coverage Based on Leading Practice



The ability to provide an initial unit on scene in 10 minutes is one aspect of providing an appropriate level of service. Municipalities must also consider the ability to provide adequate resources to effectively and safely conduct fire suppression or rescue activities to ensure both public and fire fighter safety. The service levels identified in Bylaw 10-17 *A bylaw of the Town of Okotoks in the Province of Alberta to establish fire services in and for the Town of Okotoks* provides a brief generic service level related to suppression and rescue activities.

a. Preserving life and property and protecting persons and property from injury of destruction by fire:
b. Preventing and extinguishing fires:
c. Providing rescue services and medical first response
d. Preventing, combatting, and controlling incidents

As previously outlined, this has impact on getting four firefighters on scene in 10 minutes for the initial response for incidents other than medical response. Furthermore, this has impacted the departments prescribed eight firefighter effective response force (ERF), limiting what firefighters may accomplish on the fire ground, and increasing the risk to firefighter safety.

Note: *Medical response incidents over the 5-year period represent 51.96 % of total calls*.

OFR has identified an initial response of eight firefighters to fires. This is achieved by two units responding with four firefighters in each unit. In addition, an on -call senior officer will also respond to provide incident command duties.

Observation #23: OFR has identified an initial response of eight firefighters to fires. This is achieved by two units responding with four firefighters in each unit. In addition, an on -call senior officer will also respond to provide incident command duties.

Recommendation #23: OFR continue with a two-station response structure and ensure that staffing levels are appropriate to maintain a minimum of eight firefighters on duty 24/7 to meet the municipalities current needs and circumstances related to risks identified.

Suggested completion: *1- 6 months*

Cost: *To maintain a minimum of eight firefighters on duty, OFR would need to follow the staffing ratio, outlined in Section 3.2.5, and ensure that for every four fire fighters employed there is one additional fire fighter to cover vacation and other leaves. The current state would require an additional four firefighters, and the cost associated is $450k to $667k.*

Resource: *OFR Capital Budget*

Rationale: *Maintaining a minimum of eight fire fighters on-duty always will allow OFR to meet its prescribed ERF and increase fire fighter safety. OFR will be able to provide a consistent approach to fireground activities and ensure that a detailed critical task policy could be met.*

4.2.2 Future State

4.2.2.1 Addressing Concurrent Call Load

As the community grows and the population increases, the demand for services is expected to rise. This will include more complex fire-related incidents, with an increase in building stock risks such as higher buildings, larger industrial and commercial buildings, and more residential homes. Additionally, the OFR must consider how the concurrent call load will impact responses, thus requiring additional staffed units to ensure appropriate response times to these multiple calls are maintained. If a station is already committed to an incident, an additional unit will need to respond from another station or may not be readily available, requiring units to be released quicker from other calls.

An additional unit of 4 on-duty firefighters should be considered for station #1. This would allow the municipality to cover the 10-minute response time for concurrent or multiple calls occurring simultaneously, including single vehicle responses such as medical response calls. Furthermore, the additional unit at station #1 would allow 12 firefighters to respond to multi-unit responses, meeting the ERF and providing coverage to the entire town within the 10-minute response time.

4.2.2.2 Addressing Critical Tasking and Effective Response Force (ERF)

As part of an ERF and critical tasks required, a senior response officer is needed to provide prompt and timely leadership to various multi-unit responses. The current on-call duty officer model allows for effective command presence at large incidents and adds to the needs of the ERF. As the organization grows and the demand for services increases, the demands on the on-call senior officer will also grow. This should be monitored to ensure the demands on service are appropriately resourced.

Over the past five years, OFR was able to provide the full 8 firefighters and the command officer on scene for these high-hazard responses only 50% of the time. Compared against industry standards, 8 firefighters on scene have limited abilities to safely and effectively conduct full fireground requirements, including fire suppression and rescue tasks.

The current 2 stations can accommodate staffing up to 2 crews of 4 in each station plus accommodate the on-duty Platoon Chief. This includes appropriate living space and response apparatus bays.

Observation #24: OFR has identified that an ideal effective response force of 12 firefighters plus a command officer is necessary to ensure the ability to conduct all required tasks for a residential moderate risk structure fire and perform in a safe manner for public and firefighter safety. This, however, should be further analyzed to address all the risks identified in the community and the critical tasking associated, as identified in Observation #30. To ensure that a minimum of 12 firefighters are on duty at any time, each platoon would require a minimum of 15 firefighters for a total complement of 60 firefighters.

Recommendation #24: OFR should increase the on-duty staffing to 12 firefighters and continue to utilize the on-call command officer to meet the effective response force of 13 firefighters on the initial response to moderate-risk events.

Suggested completion: *12-48 months*

Cost: *The cost to implement this recommendation would include increasing the firefighter complement to 60 firefighters (12 Captains and 48 firefighters). This captures the staffing ratio identified in Section 3.2.5. This would be an increase of 24 firefighters. This could be phased in over a four-year period, adding 6 firefighters per year. The cost associated with this at the end of the 4-year roll-out would be an increase of $2.6 to $4.0 million to the OFR operating budget. The annual cost is $650K to $1.0 million.*

Rationale: *Concurrent call volumes are only going to increase as the community grows up and out. The increase in population will increase the demand for services, and multiple incidents at the same time must be managed. Further establishing the appropriate ERF for the higher-risk, higher-frequency incidents, such as residential structure fires, will improve the risk to public and firefighter safety. OFR has identified that for most of these types of risks, the critical tasks required can be managed with 12 firefighters plus the on-call duty officer on scene.*

4.2.2.3 Addressing High-Risk, Low-Frequency Events

High-risk, low-frequency events have the potential to occur within the municipality. These include fires at larger industrial buildings, high-rise or vulnerable occupancies. These events require greater number of resources on scene to complete the necessary fire ground tactics or critical tasks to mitigate the incident. It is not feasible for a municipality to maintain these levels on a full-time basis, however there should be a plan to obtain these resources in a timely, coordinated fashion. This can be accomplished through utilizing mutual aid plans, establishing automatic aid agreements with neighbouring fire service.

In addition, the fire service should explore the ability to recall staff for these low frequency event, where off-duty staff can be paged out to respond and be compensated using an overtime system.

Observation #25: For large incidents that occur, OFR will require additional resources to complete the necessary critical tasks. To accomplish mitigating these high-risk, low frequency situations, additional resources will be required and currently OFR will require outside assistances to provide the necessary staffing numbers.

Recommendation #25: OFR investigate establishing or improving fire protection agreements, including automatic aid and mutual aid agreements with neighbouring fire services, and ensuring appropriate call-back provisions to ensure adequate resources are available for low frequency higher risk incidents.

Suggested completion: *1 – 6 months*

Cost: *Cost associated would need to be determined and based on individual agreements required and negotiated with neighbouring municipalities. These could be based on a per call, or an annual costs.*

Rationale: *Additional resource, beyond the on-duty staffing may be required from time to time. Formal plan and agreements with neighbouring fire services should be established proactively to ensure the resources can be readily obtained.*

4.2.2.4 Improvement in Response Times for a Growing Municipality

Figure 6 below identifies the growth of fire over a period of 10-plus minutes. As identified in the Community Risk Assessment, early detection of fires and earlier notification to the fire department reduces the time fire services can mitigate the situation. Furthermore, the faster fire services are on scene, the quicker they can suppress or control the fire. The use of fire sprinkler systems will restrict fire growth and contain the fire to ensure the ability for escape or rescue of occupants and allow for easier suppression by firefighters.

Residential buildings without these protections show that fire will grow exponentially, requiring a quicker intervention from fire services to improve the ability to rescue, maintain growth, and suppress the fire.

The impact of increasing fire growth rates is directly related to the time lapse from ignition to flashover, where combustible items within a given space reach a temperature high enough for them to auto-ignite. Figure 6 (below) illustrates the exponential increase in fire temperature over time and the potential for property loss and loss of life.

Figure 6: Fire Propagation Curve

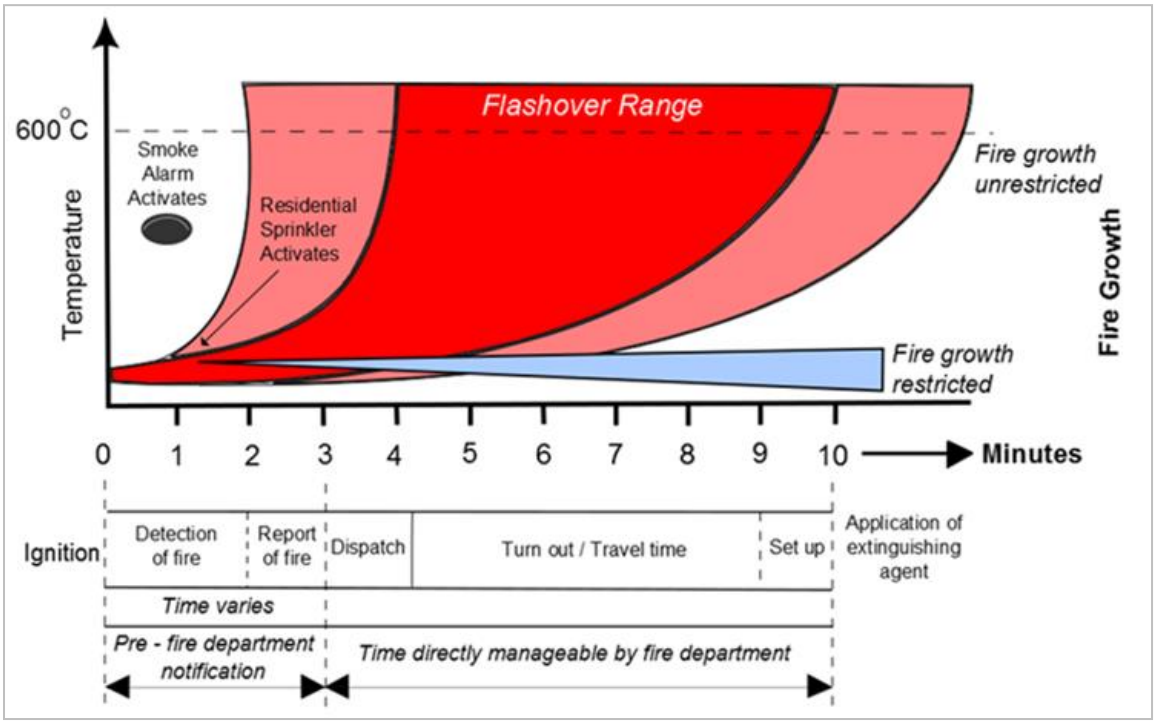


Figure Source: Fire Underwriters Survey "Alternative Water Supplies for Public Fire Protection: An informative Reference Guide for Use in Fire Insurance Grading" (May 2009) and NFPA "Fire Protection Handbook" (2001)

The municipality may consider readdressing the response time criteria as the municipality grows and becomes denser in the town core, and as the needs and circumstances for addressing risks change.

Historically, municipalities determined staffing levels based on a ratio of staff to community population whereas other municipalities used incident numbers to determine staffing levels. These methods, however, are flawed and do not consider all the aspects that could lead to the need for change in a fire department.

Municipalities must consider multiple factors when conducting a review of the service provided in times of growth or expansion. Specific response performance standards must be regularly reviewed and evaluated against the municipal council approved response standards.

As performance standards change, the fire department must evaluate the risk and adjust service levels accordingly. This could include adding an additional vehicle to the response station, adding a new station, or changing the response standards based on risk to the community. Every community should conduct regular reviews to determine its unique risks, needs, and circumstances.

Areas which need to be monitored and reviewed regularly include:

Population increases – This results in an increased demand for services and adds to traffic congestion, which can impact travel times.

Type of construction and occupancies – Each occupancy type presents a different risk to the community and will require appropriate resources to address the risk. An increase in moderate and higher risk occupancy types, such as larger industrial, high-rise residential, and big box commercial buildings, all present greater risks and require greater resources to manage.

Concurrent call loads – As communities grow, the service demand will increase. Multiple calls occurring at the same time (concurrent call load) will increase pressure on response times and response resources, necessitating consideration of additional resources.

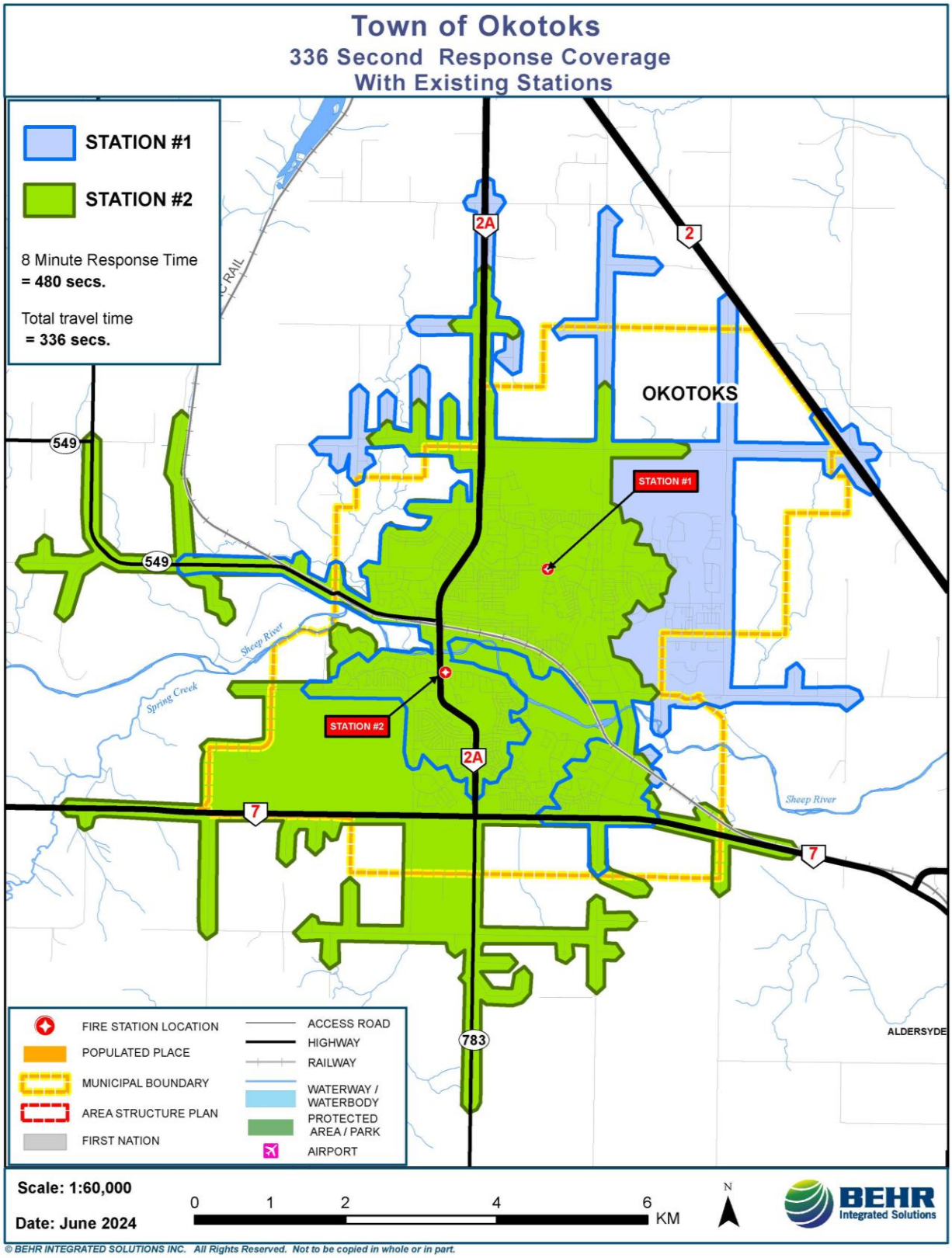
Service level expectations established by Council – Municipal Councils need to establish the level of service expected from the fire service. To ensure these service levels can be provided safely and effectively, appropriate resources are required.

Changes to any aspect of the above list will challenge a fire department to provide appropriate service levels. Fire departments often consider adopting the principles of industry standards, lowering the total response times, and adjusting effective response forces to meet new needs or requirements of the community. One aspect for consideration would be decreasing the 10-minute response time to an eight-minute total response time performance. Map 4 illustrates an 8-minute total response time from both of the existing stations. The 10-minute response across the entire boundaries is still achieved, and the map indicates where eight minutes is maintained. The 8-minute total response time of the initial responding unit could be covered within the current station configuration. The 10-minute response with a full response could be maintained for a great portion of the community.

Using the projected 20-year growth (utilizing the Province of Alberta's 5-year growth rate of 10.14%) the municipality will need to implement recommendation #6 of an additional crew to be able to service the community utilizing the two-station model and the current 10-minute response time. Two stations will be able to service the community should the department decide to improve the response time standard to 8 minutes.

The municipality has many considerations in determining appropriate staffing and resources required to provide the level of service it determines necessary for the community.

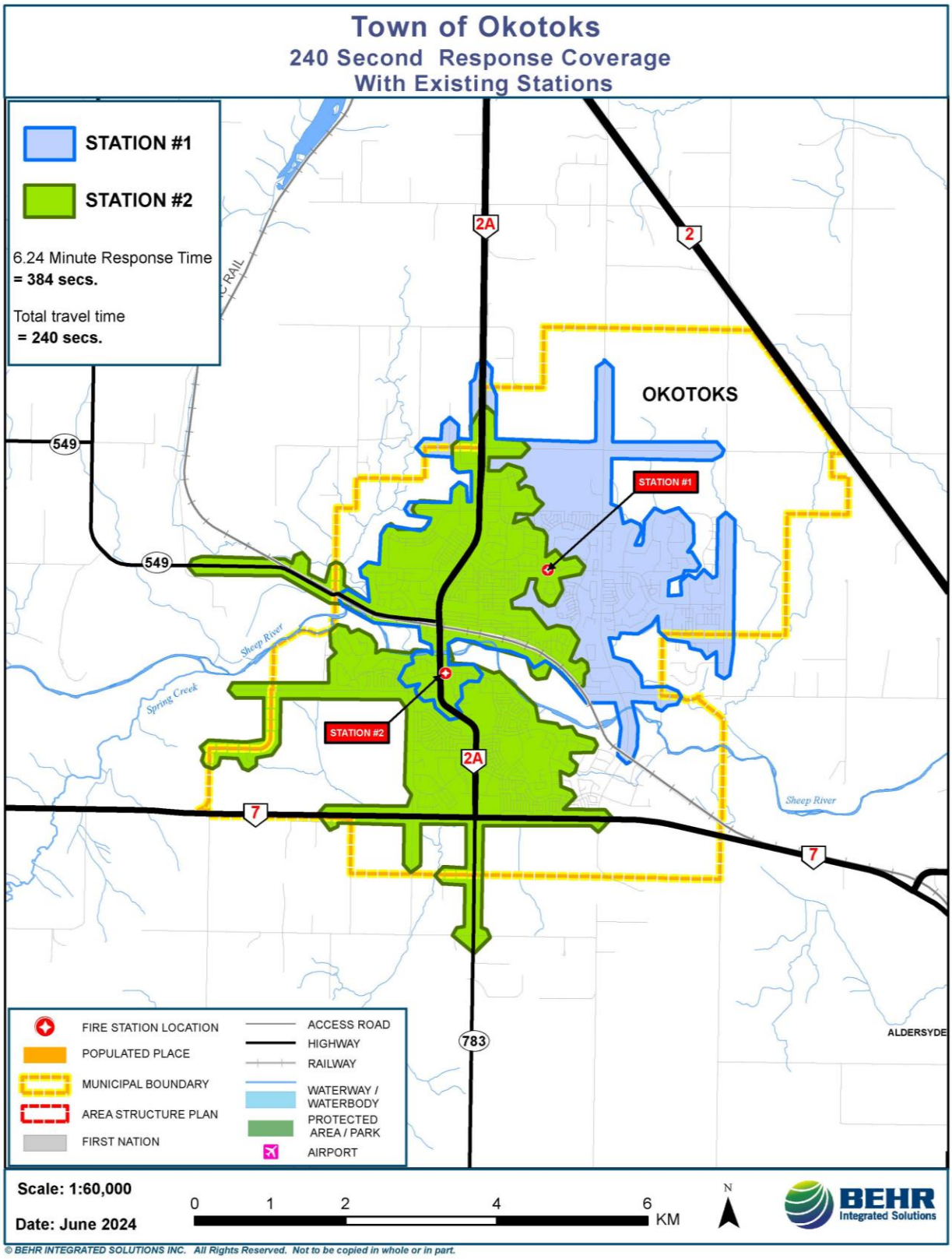
Map 4: 8-minute total response from each station (336-second travel time)



If the municipality were to explore NFPA 1710 principles with a 6:24 second total response time, it would require the municipality to reconsider station locations, number of stations and appropriate crew distribution. Consideration must ensure that both the distribution (first-in unit) and concentration (ERF) are maintained to provide effective services.

Map 5 indicates where a 4-minute (240 sec) travel time or a 6:24 min (384 sec) total response time can be achieved under the current 2-station model. A 6:24 minute total response time would leave gaps around the fringes of the community, namely the southeast and northeast corners and partially in the southwest corner. Further studies would need to be completed to determine the appropriate station locations to provide full coverage for this response performance.

Map 5: 6:24 min total response time (240 sec travel time)



4.3 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 range of services provided by the modern fire service is often surprising. Fire departments have evolved from responding primarily to fires to responding to a broad range of public service and emergency incidents and becoming a critical component of public safety services.

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 14: 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 14: Incident Count by Category (2018-2022)

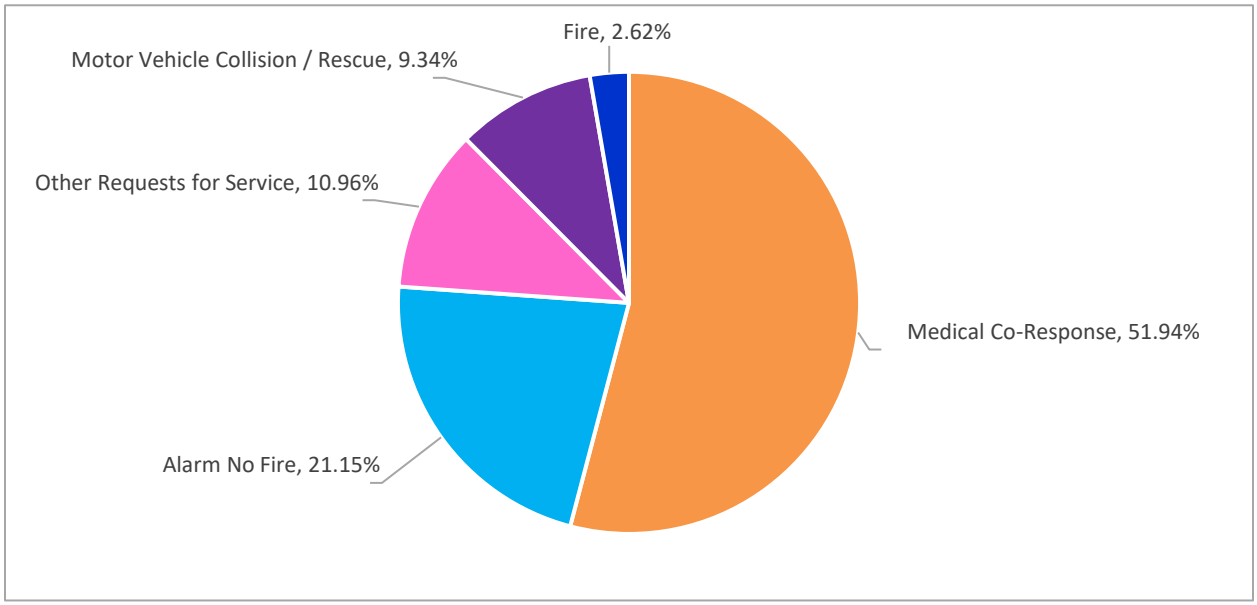
Incident Type	2018	2019	2020	2021	2022	Total
Medical Co-Response	509	426	389	470	581	**2372**
Alarm No Fire	180	229	240	207	294	**1150**
Other Requests for Service	110	97	110	90	92	**499**
Motor Vehicle Incidents / Rescue	57	76	72	120	99	**424**
Fire	27	29	19	19	26	**120**
Total	**881**	**856**	**830**	**906**	**1092**	**4565**

The following key observations regarding incident types were noted:

- Medical first response incidents were the most frequent
  - This is a common trend for fire departments providing this service
- Alarm No Fire incidents are the second most common incident type. These are trending higher and were 63% higher in 2022 than in 2018
- Other Requests for Service (such as gas leak, public service, complaint/controlled burn) occurred with approximately the same frequency over this period
- Fires including structure, vehicle, and outside fires were relatively infrequent.

Chart 1: Incident Frequency by Percentage (2018-2022) provides a five-year aggregated analysis of the broad incident categories.

Chart 1: Incident Frequency by Percentage (2018-2022)

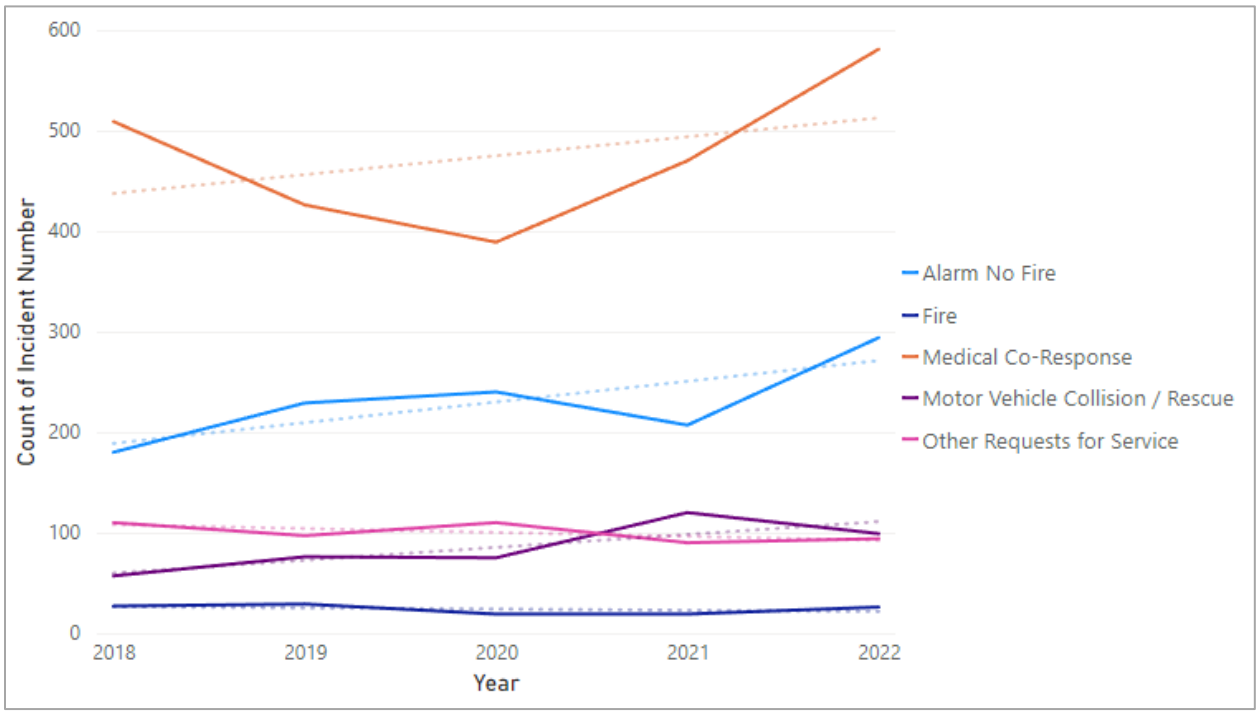


The following key observations regarding incident types from 2018-2022 were noted:

- Medical Co-response and Alarm No Fire were the most common incidents managed during this period. The remaining workload makes up for less than 25% of activity.

Chart 2: 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 2: General Incident Trends



The following key observations regarding incident types were noted:

- Medical first-response incidents declined from 2018-2020 before increasing significantly over the last two years.
- Alarm incidents increased by 63% from 2018 to 2022.
- All other categories of incidents were relatively unchanged during this period.

Table 15: Incident Count by Subcategory (2018-2022) expands the broader incident types into subcategories. This information provides greater detail into specific types of incident categories.

Table 15: Incident Count by Subcategory (2018-2022)

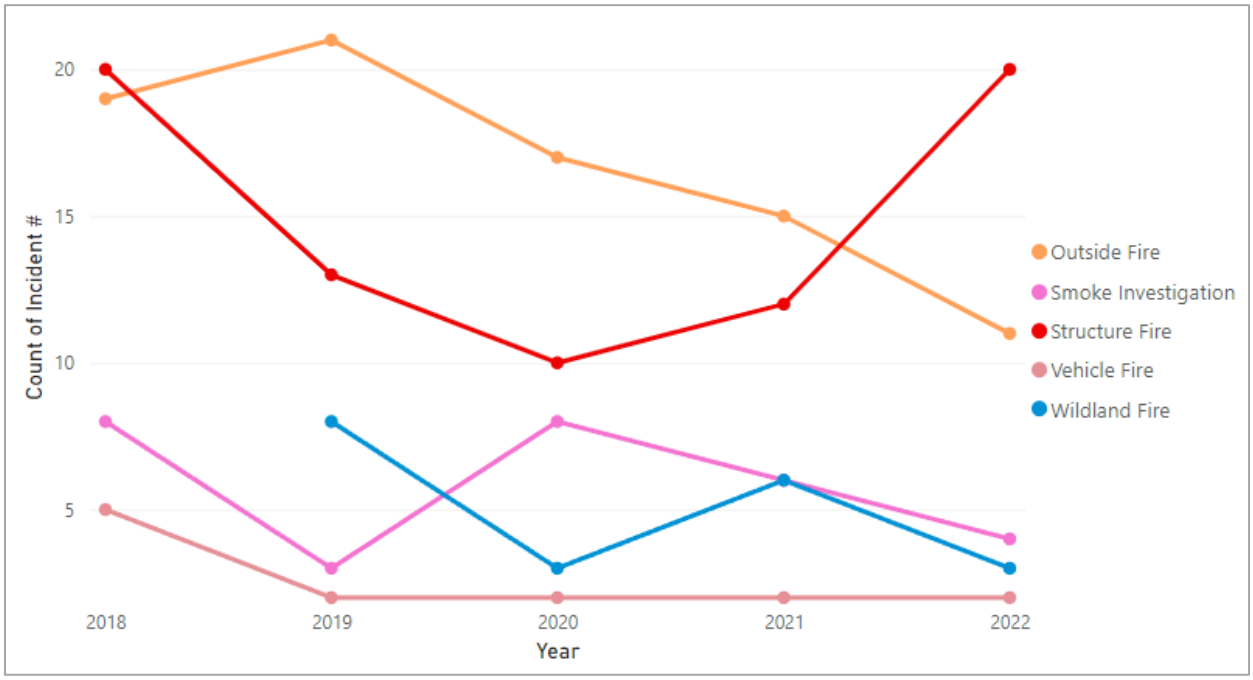
Incident Type	2018	2019	2020	2021	2022	Total
Medical Co-Response	507	425	389	470	581	**2372**
Alarm No Fire	180	229	240	207	294	**1150**
Other Requests For Service						
Gas Leak	32	28	27	24	26	**137**
Public Service	32	23	27	17	28	**127**
Complaint / Controlled Burn	15	17	24	23	21	**100**
Other Requests For Service						
Public Hazard	22	23	23	20	9	**97**
Other / Unclassified	9	6	9	6	8	**38**
Motor Vehicle Incidents / Rescue						
Vehicle Incident	35	49	32	66	64	**246**
Rescue	22	27	40	54	35	**178**
Fire						
Fire	15	12	9	9	15	**60**
Rubbish or grass fire (no dollar loss)	12	17	10	10	11	**60**
Total	**881**	**856**	**830**	**906**	**1092**	**4565**

The following key observations regarding incident subcategories were noted:

- Vehicle Accident incident types have nearly doubled from 35 to 64 over the period.
- Structure/Vehicle/Grass Fires (with dollar loss) are relatively low with 50% being classified as Rubbish or grass fires (no dollar loss).
- Gas leak was 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 FRSMP. Unfortunately, further classification of fire incident data was unavailable from the fire department records management system, so analysis was completed using the initial classification of events by dispatch. Some of the events in this chart may not have been a fire and hence classified as a different category in previous tables.

Chart 3: Dispatch Initial Incident Classification of Fires (2018-2022)

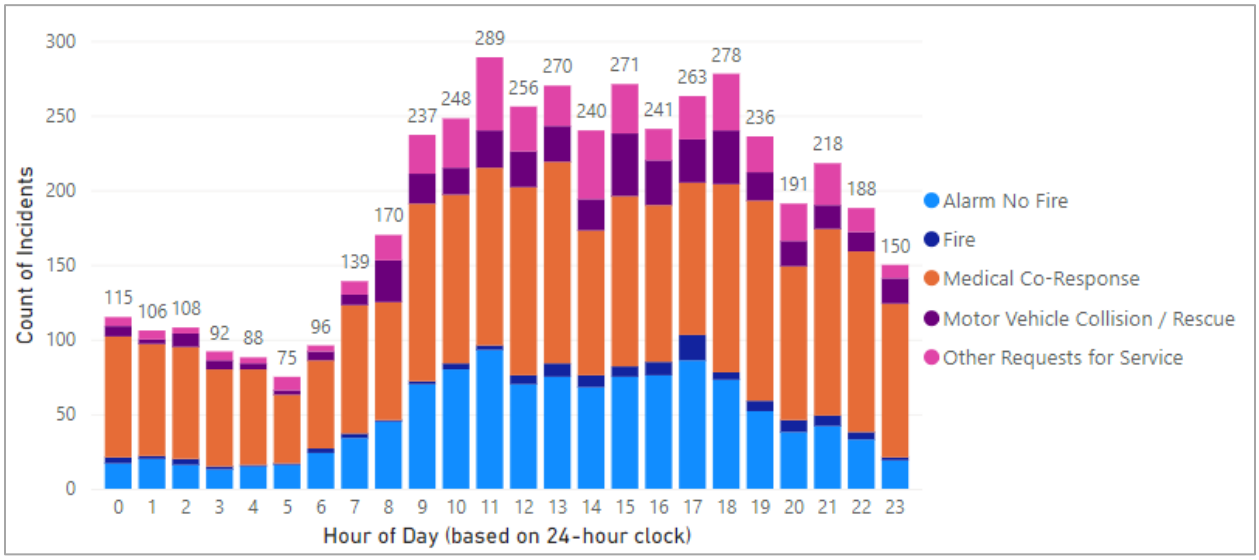


The following key observations regarding fire-related incidents were noted:

- Outside fires have decreased every year since 2019.
- Structure fires initially decreased but have risen in the last two years
- Vehicle fires, Wildland Fires, and smoke investigations remained relatively unchanged and infrequent.

Chart 4: Incidents by Time of Day (2018-2022) 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 4: Incidents by Time of Day (2018-2022)

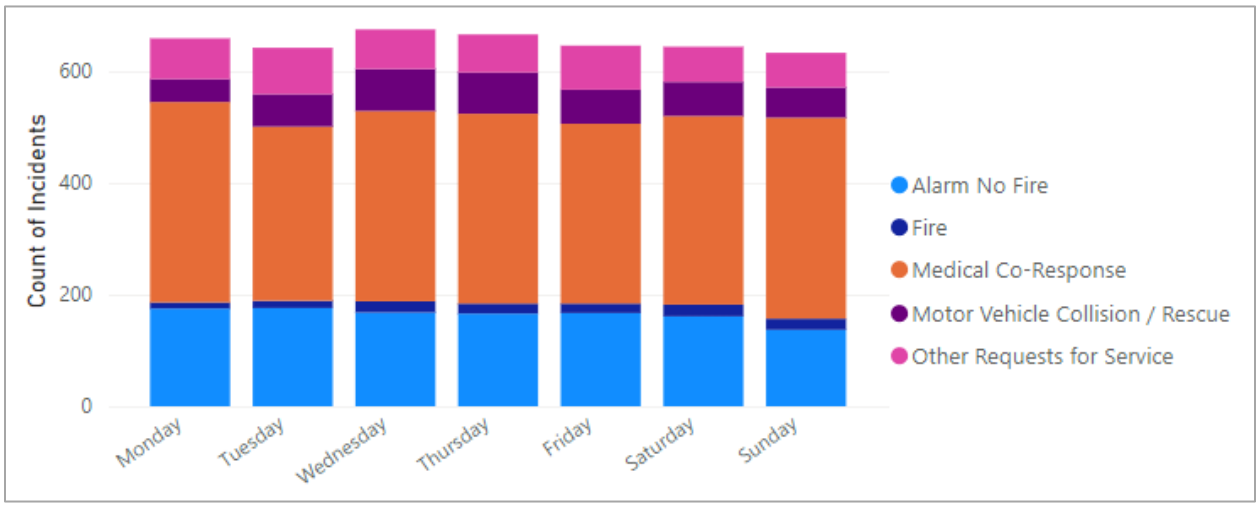


The following key observations regarding the time-of-day incidents occurred were noted:

- The peak period of demand was noted between 9 am and 7 pm
  - In our experience, this is a common pattern that is aligned with the level of activity in the community.
- The period between midnight and 7 am is the lowest period of demand for services.

Chart 5: Incidents by Day of Week (2018-2022) identifies the demand for services by the day of the week. Monitoring the days of the week during which OFR experiences the highest and lowest demand provides additional insight into potential pressures on in-service delivery.

Chart 5: Incidents by Day of Week (2018-2022)



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

- In general, there was no variation in demand for services by day of week with only 42 incidents separating the smallest from the largest event counts over 5 years.

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.

4.3 Intervention Time and NFPA 1710 Response Standards

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

4.3.1 Intervention Time

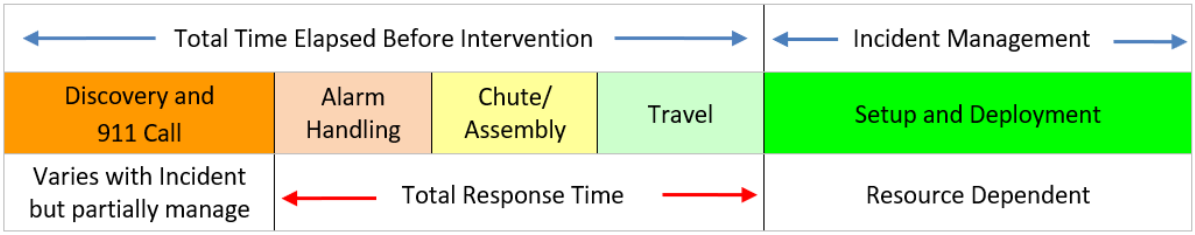
Total intervention time is the elapsed time between the incident occurring and the time incident management begins. The discovery of the incident and initiation of the emergency response system begins typically by calling 911. From a community perspective, the time to discover a fire is partially manageable 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 7 provides an overview of the incident intervention timeline. The definitions and descriptions of the actions taken in each time segment are provided below.

Figure 7: 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.

4.3.2 NFPA 1710 and OFR Performance Standards

NFPA 1710 standards apply to career-staffed fire stations. Table 16: NFPA 1710 Performance Standards identifies the response goals in this standard. Time standards are identified for alarm handling (alarm answering plus alarm processing times), assembly (or chute) time, and travel time. NFPA 1710 also includes several additional standards for fire, rescue, and EMS operations, and indicates the number of firefighters required to safely manage different types of fire and rescue incidents. This standard also provides a platform for developing response plans for higher hazard fires.

Table 16 provides a comparison between NFPA 1710 standards and OFR service levels. NFPA 1710 identifies standards for call answering and alarm processing, which when combined are referred to as alarm handling. There are also standards for assembly and travel times for the first arriving four firefighters and full alarm assignments. These response standards are based on a structure fire within a typical single-family dwelling of 2,000 ft.^{2} (186 m^2) without a basement and no exposures.

It is noteworthy to mention that the first arriving and full alarm total response times are inferred. NFPA 1710 does not specifically identify a response standard for first arriving fire apparatus and the full alarm assignment. However, it is common practice to add the percentile performance times for alarm handling, chute, and travel times to infer the first arriving response goal of 6 minutes and 39 seconds, 90% of the time. Similarly, 10 minutes and 39 seconds, 90% of the time is the inferred time standard for the assembly of the full alarm assignment.

OFR does not have defined service levels for alarm handling, chute, and travel times. Fire department leadership has established a performance objective of first arrival of apparatus with four firefighters capable of intervening the incident in 10 mins.

Table 16: NFPA 1710 Performance Standards

Time Segment	NFPA 1710 Standards	OFR Service Level
Alarm answering	15 sec/90th Percentile	n/a
Alarm processing	64 sec/90th Percentile	n/a
Chute	80 sec/90th Percentile	n/a
Travel (first arriving)	240 sec/90th Percentile	n/a
Travel (full alarm)	480 sec/90th Percentile	n/a
First arriving engine with four firefighters	399 sec/90th Percentile*	600 sec/90th Percentile**
Full alarm assignment with 16 firefighters	639 sec/90th Percentile*	n/a

**Inferred standard. Alarm Answering time was not available for this report so 384 sec and 624 secs are used as the NFPA comparison in the following analysis sub-sections of this FRSMP.*

***Does not include the 15 seconds for Alarm answering. Based on National Building Code (Alberta Edition) 10-minute rule for spatial separation of buildings.*

The intent of these aggressive timelines is to minimize intervention time. Intervention time is defined as the time between the fire department receiving notification of an emergency and commencing assistance at the scene of the emergency. It is the best reflection of the elapsed time from identifying an emergency to having the fire department arrive and engage in managing the incident.

Increased intervention time can have the following important impacts on a property owner:

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

There are two elements of the total intervention time for career department models that should be assessed. The first is the initial response time taken for the initial arrival of an apparatus capable of initiating an intervention. The second is the time taken to assemble the full alarm assignment. The time taken to assemble a full alarm assignment reflects a fire department's total capacity and responsiveness. A full alarm assignment is comprised of the appropriate fire apparatus and the number of firefighters, or an Effective Response Force (ERF), to safely manage the incident. Response performance and the ability to assemble an ERF is assessed in the following section.

4.4 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 town boundary. The NBC-AB2019 10-minute response initial response for structure fires will also be assessed.

Foothills Regional Emergency Services Commission (FRESC) provides dispatching services for OFR. FRESC dispatchers capture all emergency incident timestamps. 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 OFR. This methodology is consistent in measuring response performance for NFPA 1710 and the National Building Code of Canada – 2019 Alberta Edition.

For the purposes of this analysis, event time analysis used the initial event record without an assigned suffix obtained from Okotoks Records Management System (RMS).

4.4.1 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. 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.

Alarm Answer Times were not available to fully assess the Alarm Handling timeframe.

Table 17 provides an assessment of 90th percentile times taken for alarm handling for different incident categories as classified post-response by OFR in their Records Management System (RMS).

*Table 17: 90th Percentile Alarm Processing by RMS Incident Type (in secs) **

Incident Type	2018	2019	2020	2021	2022	5 Yr.	# of Incidents
Medical Co-Response	358	326	303	58	50	**283**	**2368**
Alarm No Fire	76	72	62	65	62	**67**	**1144**
Other Requests For Service							
Gas Leak	135	129	91	126	112	**120**	**133**
Public Service	155	99	180	134	132	**149**	**112**
Complaint / Controlled Burn	149	135	98	123	139	**140**	**95**
Public Hazard	100	127	138	145	103	**130**	**94**
Other / Unclassified	185	111	208	211	87	**194**	**35**
Motor Vehicle Incident / Rescue							
Vehicle Incident	176	197	137	177	198	**187**	**246**
Rescue	1013	538	125	103	76	**226**	**177**
Fire							
Fire	65	58	72	84	68	**78**	**60**
Rubbish or grass fire (no dollar loss)	159	114	98	85	87	**105**	**60**
Combined	**319**	**283**	**251**	**93**	**75**	**235**	**4524**

**Excluded Incidents where Alarm Processing equal to 0*

Table 18 shows the Alarm processing time by initial dispatch classification. This can be helpful in determining which incident evaluation protocols may be taking longer to evaluate. Please note that Table 18 is based on data received from the dispatch provider and incident totals will not align precisely with incident volume received from OFR Records Management system.

When assessing compliance to NFPA 1710, the Fire high priority incident types, such as Fire or Explosion as per NFPA 1710, should be compared to the 64 second target.

Table 18: 90th Percentile Alarm Processing by Initial Dispatch Categorization Incident Type (in secs)

Dispatch Card Type	2018	2019	2020	2021	2022	5 Year 90th	# of Incidents
Aircraft Emergency		59			150	**133**	3
Alarms	75	69	63	68	65	**68**	1142
Confined Space/Structure Collapse	178				49	**153**	3
Electrical Hazard	81	143	132	152	46	**151**	16
Elevator/Escalator Incident	81	68	61	75	64	**78**	8
Extrication Entrapment		87	192		241	**240**	5
Fuel Spill / Fuel Odour	100	95	139	149	100	**131**	49
Gas Leak / Gas Odour	139	97	86	138	61	**113**	62
Haz Mat	102	126	113	74	60	**118**	28
Lightning Strike				66		**66**	1
Medical Co-Response	359	320	374	367	418	**364**	2256
Mutual Aid - Outside Agency	1017	613	179	726	359	**759**	211
Odour	108	57	121	176	84	**107**	27
Outside Fire	124	120	100	92	92	**114**	83
Service Call	209	103	126	121	183	**197**	119
Smoke Investigation	145	101	212	153	139	**176**	29
Structure Fire	116	104	77	80	74	**95**	75
Vehicle Accident	190	200	158	184	214	**190**	225
Vehicle Fire	56	17	76	68	85	**77**	13
Water/Ice/Mud Rescue	124	51		100		**123**	4
Watercraft in Distress / Collision		250				**250**	1
Wildland Fire		136	87	86	70	**95**	20
Total	**326**	**282**	**300**	**312**	**311**	**305**	**4380**

The following key observations regarding alarm processing time were noted:

- Incidents of confirmed fires with loss were processed at 78 seconds. In the structure fire category, however, FRESC took slightly longer at 95 seconds over the five-year period. These are both above the 64 second NFPA target at the 90th percentile.
- Further analysis concluded that the 64 second threshold was met for Fires at the **80th percentile**.

- Medical incident alarm processing is managed by Alberta Health Services and subsequently sent to FRESC dispatch to request a medical first response. The method of how these times is recorded in the RMS changed in 2021 to better reflect the time it took FRESC to request OFR in the RMS data
- Motor vehicle incidents and rescues were processed in 187 and 226 seconds respectively.

Observation #26: FRESC alarm processing performance for emergency incidents exceeded the NFPA 1225 alarm handling standard of 64 seconds in every category, however 80th percentile performance for fires met the 64 seconds. In interviews, staff indicated there was periodic use of pre-alerting the fire station but without consistent process, procedure, or timestamp recorded.

Recommendation #26: Identify alarm handling process improvement opportunities and benchmarks. Formalize the pre-alerting of the appropriate fire station once the location and card type are known and document the timestamp that the fire department was notified.

Suggested completion: *1 - 12 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. Pre-alerting fire crews with a high-level incident categorization and location will stop the timer for alarm processing and trigger the next phase in the emergency response timeline where crews can begin assembling apparatus and start travelling to the incident. This increased efficiency extends the distance that OFR could respond in 10 minutes.*

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. Alarm handling times for medical incidents were particularly extended. As a result, OFR administration should work with FRESC and Alberta Health Services to identify opportunities to improve that process. Further, alarm processing times should be monitored and reported regularly.

4.4.2 Assembly Time Performance

Assembly (or Chute) time is measured from the point of fire department notification until the first responding fire/rescue apparatus has responded. For career staff, assembly time is typically much shorter as it is limited to moving toward the fire engine, putting on their bunker gear and getting into the vehicle. For community firefighters not in the station, assembly time includes the time when a call is issued, and the time required to travel to the fire station as well as any preparation before responding.

Assembly time performance should be monitored and reported to firefighting crews regularly. NFPA 1710 identifies a 90th percentile chute time standard of 80 seconds for career firefighters (60 seconds for EMS events). The 80-second standard can be a challenge to achieve. Attention to station design, activities within a station and firefighter awareness can all help to improve and optimize response performance.

Table 19 identifies times for the high-priority Fire incidents as well as medical incidents and all other incident types.

Table 19: 90th Percentile Assembly Performance by Incident Type (in secs)

Incident Type	2018	2019	2020	2021	2022	5-year
All Other Requests for Fire Response	154	148	152	171	163	**159**
Fire	175	151	143	167	164	**167**
Medical Co-Response	146	138	141	164	168	**153**
All Incident Types	**150**	**144**	**147**	**168**	**166**	**157**

Table 20 identifies times by shift. This can sometimes be helpful to identify where there may be workflow differences between shifts given, they operate in the same physical environment.

Table 20: 90th Percentile Assembly Performance by Shift (in secs) (2018-2022)

Incident Type	A Shift	B Shift	C Shift	D Shift
Medical Co-Response	168	160	136	146
Fire	173	167	138	146
All Other Requests for Fire Services	168	161	146	158
All Incident Types	**168**	**161**	**142**	**153**

The following key observations regarding assembly time were noted:

- The 90th percentile assembly times are significantly above the 80 second target and more than double for fires over the 5-year period
    - C Shift had a noticeable difference in their assembly times across all incident types.

Observation #27: As previously identified, the 90th percentile assembly times are significantly above the 80 second target and more than double for fires over the 5-year period. OFR needs to identify best practices and potential process efficiencies for assembly time enhancements that would benefit all shifts.

Recommendation #27: 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 (Alberta Edition) 2019 and the impact of response time to development standards in a community.

4.4.3 Travel Time Performance

Travel time is measured from the point a fire/rescue apparatus leaves the fire station to arriving at the incident address/location. Travel time is a function of incident distance from the fire station and the speed travelled to the incident. It can be managed to a certain point in larger municipalities with multiple demand zones and stations. These larger departments can distribute fire resources in the most optimal response locations in the demand zones. This is difficult in smaller municipalities with fewer stations.

Travel time should be monitored over time to assess whether additional resources are required in different locations to maintain desired service levels. NFPA 1710 identifies a first arriving travel time performance goal of 240 seconds, 90% of the time for career fire stations. This standard is most frequently applied to urban and suburban developments. In low density urban and suburban developments that are primarily large lot single residential properties, this travel time performance can be a challenge to achieve. OFR does not have a specific travel time goal.

Table 21 identifies the 90th percentile travel time for emergency incidents within Okotoks.

Table 21: 90th Percentile Travel Performance by Incident Type by Year (in secs)

Incident Type	2018	2019	2020	2021	2022	5-year
All Other Requests for Fire Services	446	399	411	450	438	**432**
Fire	332	411	291	422	406	**409**
Medical Co-Response	370	320	340	361	402	**368**
All Incident Types	**392**	**367**	**384**	**412**	**425**	**397**

Table 22 identifies the 90th percentile travel time for emergency incidents within Okotoks.

Table 22: 90th Percentile Travel Performance by Incident Type by Shift (in secs) (2018-2022)

Incident Type	A Shift	B Shift	C Shift	D Shift
All Other Requests for Fire Services	429	438	392	453
Fire	411	381	404	327
Medical Co-Response	380	373	352	364
All Incident Types	**401**	**407**	**370**	**413**

The following key observations regarding travel time were noted:

- The 90th percentile travel times increased over the five-year period.
  - As the town continues to develop and road networks are extended, travel times will increase
- C Shift also had the lowest overall travel time in addition to lowest assembly time over the study period.

Observation #28: Although OFR does not have a travel time objective, it is an important component of their overall response goal of four firefighters arriving in ten minutes. NFPA 1710 recommends a travel time standard of 240 seconds, 90 percent of the time for the first engine to travel to the incident. The recorded travel times for the first out apparatus is over two minutes longer than the NFPA 1710 target.

Recommendation #28: 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. Traffic light pre-emption is another tool to reduce start and stops at intersections and assist fire department apparatus in navigating to the emergency. Temporary move-up locations can be useful when incident occurrence in particular locations is time-bounded to certain times of the day, such as rush hour. Fire department response times may benefit from temporary deployment locations as well.*

4.4.4 Response Time Performance

Total response time is measured from the point at which the 911 call is answered to the point at which the first arriving firefighting apparatus arrives. The NFPA 1710 standard implies a response time performance goal of 384 seconds (excluding alarm answering time) for the first arriving fire apparatus in urban areas (see Section 4.3.2).

Table 23 identifies the total response time for the incident categories. Total response time includes alarm processing, assembly, and travel time segments. Additionally, compliance with NFPA 1710 (384 sec) standard and Okotoks Fire & Rescue target on fire department service levels (600 sec) was measured.

Table 23: 90th Percentile Response Performance by Incident Type (in secs) (2018-July 2023)

Incident Type	2018	2019	2020	2021	2022	2023 (Jan-Jul)	All Years
Medical Co-Response	753	697	691	507	546	**523**	**667**
Fire	526	589	449	627	572	**541**	**573**
All Other Requests for Fire Services	637	596	585	635	621	**662**	**624**
90th percentile All Incident Types	**723**	**654**	**658**	**596**	**597**	**597**	**645**
NFPA 384 sec compliance	27%	31%	41%	51%	45%	45%	40%
600 sec compliance All Incident Types	78%	82%	86%	90%	90%	90%	86%
600 sec compliance with 4 Firefighters (Fires only)	78%	55%	47%	16%	54%	47%	52%
600 sec compliance with 4 Firefighters (All incident types except medicals)	52%	43%	35%	34%	49%	50%	46%

The following key observations regarding response time were noted:

- OFR did not meet the goal of also having 4 firefighters on scene within the 600 second timeframe. For fire events constituting increased risk, OFR only had 4 firefighters on scene within 600 seconds 52% of the time over the study period. Notably, it varied from a high of 78% in 2018 to a low of 16% in 2021. This is discussed further in section 4.6
- The 90th percentile for fire events was 573 seconds which met the OFR performance objective and the NBC (Alberta Edition 2019) spatial separation threshold for a 600 second (10-minute) response time. The 90th percentile response time has significantly improved since 2018 by 126 seconds and met the OFR standard across all incidents in 2021 and 2022
- Compliance with the NFPA 1710 response standard of 384 seconds was relatively low at 40%

Table 24 shows the expanded 90th percentile response times across the expanded list of RMS incident types.

Table 24: 90th Percentile Response Performance by Incident Type (in secs) (2018-2022)

Incident Type	2018	2019	2020	2021	2022	5 Yr.	# of Incidents
Medical Co-Response	753	697	691	507	546	**676**	**2368**
Alarm No Fire	578	537	543	632	602	**576**	**1144**
Other Requests For Service							
Gas Leak	527	543	470	583	562	**555**	**133**
Public Service	586	619	799	792	690	**727**	**112**
Other Requests For Service							
Complaint / Controlled Burn	579	802	769	707	641	**690**	**95**
Public Hazard	944	729	586	618	619	**699**	**94**
Other / Unclassified	775	554	670	768	666	**772**	**35**
Motor Vehicle Incident / Rescue							
Vehicle Accident	535	587	577	614	692	**614**	**246**
Rescue	1508	910	659	576	583	**704**	**177**
Fire							
Fire	526	589	449	627	572	**573**	**60**
Rubbish/grass fire (no dollar loss)	735	785	1067	1133	616	**803**	**60**
Total	**319**	**283**	**251**	**93**	**75**	**235**	**4524**

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

Table 25: 90th Percentile Response Performance by Shift provides a summary of the response performance by incident category as a sum of alarm handling, assembly, and travel time.

Table 25: 90th Percentile Response Performance by Shift (in secs) (2018-2022)

Incident Type	A Shift	B Shift	C Shift	D Shift	90th percentile
Medical Co-Response	705	685	652	629	**676**
Fire	598	534	570	522	**573**
All Other Requests for Fire Services	617	634	571	642	**616**
90th percentile	**668**	**668**	**620**	**640**	**649**

The following key observations regarding response time segments were noted:

- Although C shift outperformed other shifts overall, D shift had the lowest response times to fire events at 522 seconds.

Table 26 provides a summary of the performance by shift annually as a sum of alarm handling, assembly, and travel time.

Table 26: 90th Percentile Shift Response Performance by Year (in secs) (2018-2022)

Incident Type	2018	2019	2020	2021	2022	90th percentile
A shift	742	652	668	622	611	**668**
B shift	782	686	652	598	571	**668**
C shift	688	637	673	571	532	**620**
D shift	696	651	616	595	623	**640**
90th percentile	**723**	**654**	**658**	**596**	**597**	**649**

The following key observations regarding response time segments were noted:

- All shifts have shown improvement in response times from 2018-2022 ranging from 73 seconds up to 211 seconds. This demonstrates system improvement is occurring across all shifts.

4.5 Response Time Mapping Analysis

The following section includes maps illustrating various scenarios of OFR response coverage. The 10-minute fire department response area is determined by calculating and mapping a theoretical travel time. The general methodology used to calculate the 90th percentile theoretical travel time is based on the following formula:

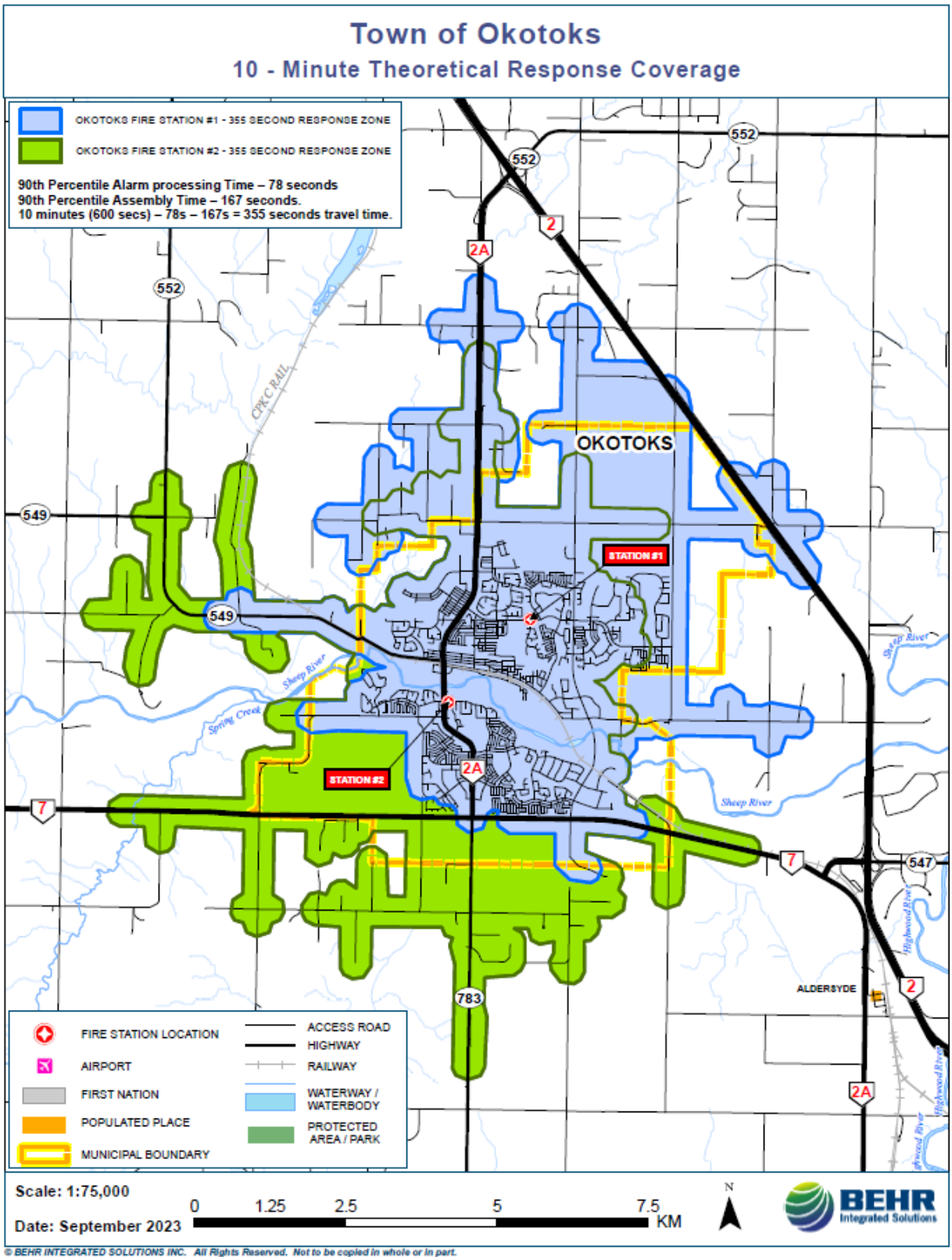
10 min (600 sec) – (90th percentile Alarm Processing Time (in sec) + 90th percentile Assembly Time (in sec) = Theoretical Travel Time (in sec)

Map 6: 10-Minute Theoretical Response Coverage illustrates the theoretical 10-minute response area from the current fire stations. As discussed in Section 4.1.2, the National Building Code of Canada – 2019 Alberta Edition identifies specific construction/development requirements for properties outside of a 10-minute fire department response. For new construction outside a 10-minute fire department response the NBC-(AE2019 identifies a requirement to increase limiting distance or sprinkler all floors of the property. The 10-minute fire department response is measured from the point a fire dispatcher receives a call to the arrival of the first apparatus capable of initiating fire suppression. When applying this methodology for OFR (using historical fire incident times), the theoretical travel time is:

600 sec – (78 sec + 167 sec) = 355 seconds

The 355 seconds of travel time were plotted using current Town of Okotoks road network and speed data.

Map 6: 10-Minute Theoretical Response Coverage



Observation #29: Despite considerable overlap in the 10-minute response time mapping of the two fire stations, they currently meet the needs for deploying resources and response performance standards of four firefighters in ten minutes.

Recommendation #29: Monitor future development and pressures on response time and examine opportunities for improvement.

Suggested Completion*: 24-60 months*

Cost*: TBD (Based upon outcome of relocation feasibility analysis)*

Resource*: OFR Capital budget*

Rationale: *The current analysis shows that the existing fire halls can meet the response times goals based on future development. The National Fire Code of Canada – 2019 Alberta Edition stipulates that the formula for calculating limiting distance uses a 0.5 factor instead of 1. As a result, the limiting distance from the property line to the new construction is doubled unless one of two conditions is met which exempts this requirement. If a fire department response is available within 10 minutes, 90% of the time or all floors of the building have interior sprinklers, the use of the 0.5 factor is not required.*

Map 7: 10 – Minute Response Coverage Based on Leading Practice Response Times illustrates the potential added coverage if alarm processing time and assembly time were reduced to meet the NFPA Standard.

When applying this potential analysis (using NFPA standard alarm processing and assembly times), the theoretical travel time is:

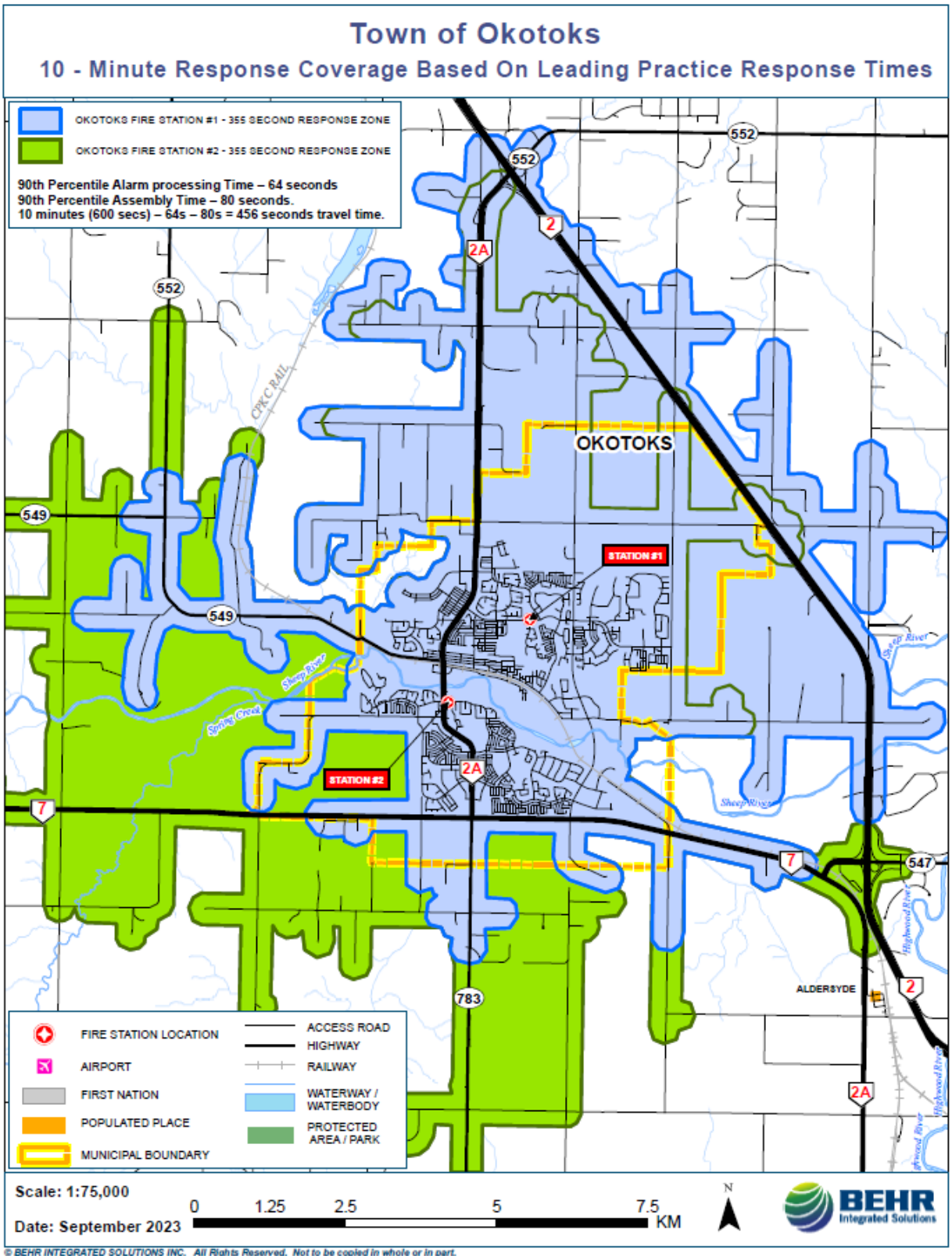
600 sec – (64 sec + 80 sec) = 456 seconds

The 456 seconds of travel time was plotted using the current Town of Okotoks road network and speed data.

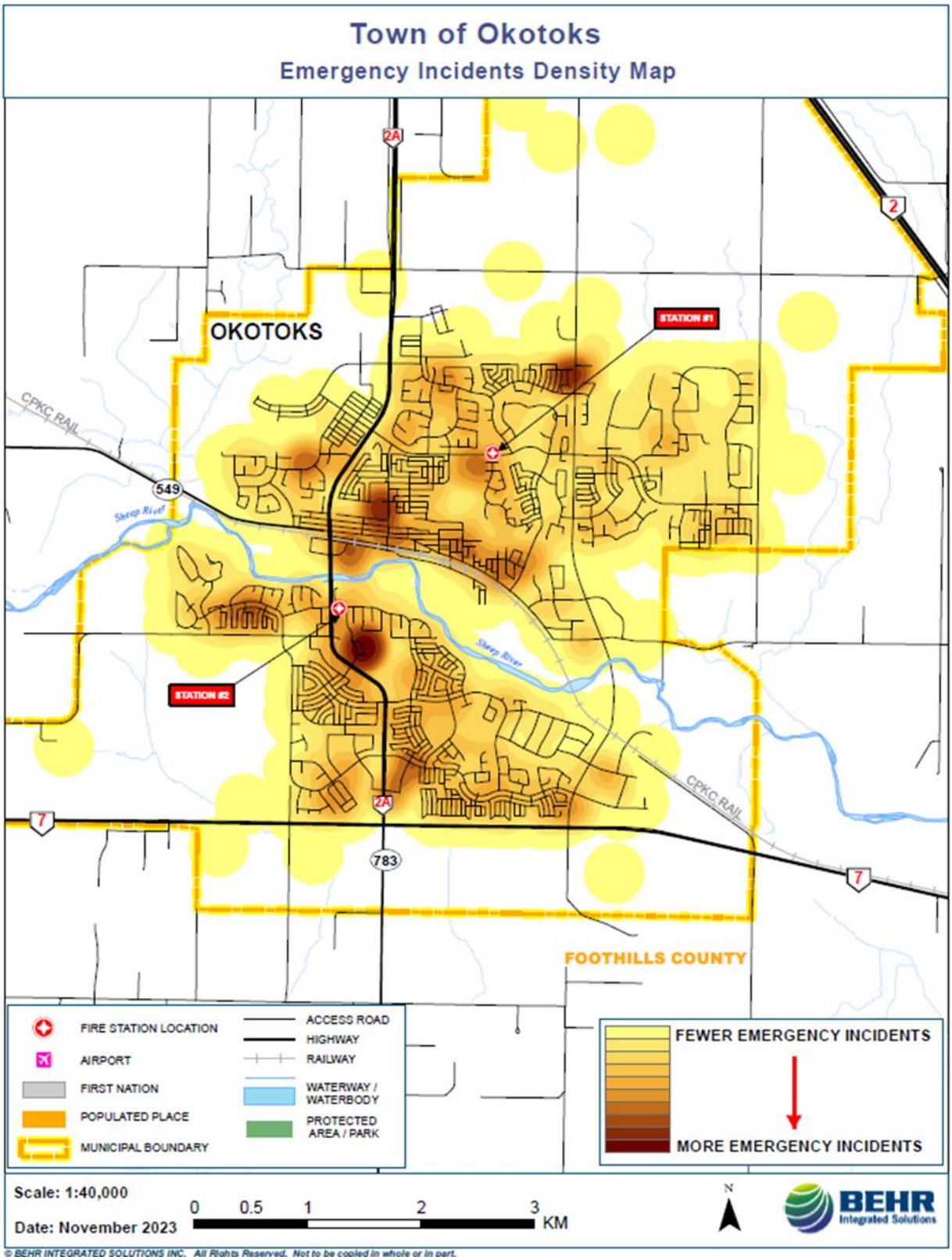
Coverage from the existing station locations expands coverage areas once alarm processing and assembly times are reduced to meet NFPA standards. As discussed in sections 4.4.1 and 4.4.2, opportunities exist to improve alarm processing and assembly times as development expands in the community while still maintaining compliance with building code standards for response time.

Map 8: Emergency Incident Density Map illustrates the density of all emergency incidents that OFR responded to from 2018-2022. Several areas of increased incident volume occur along the southern edges of existing development. As discussed previously in Observation 29, the municipality should continue to monitor these increases and the impacts they may have on response time.

Map 7: 10 – Minute Response Coverage Based on Leading Practice Response Times



Map 8: Emergency Incident Density Map



4.6 Effective Response Force (ERF)

The Okotoks Fire & Rescue is a career department, relying on an initial response of four firefighters on a fire apparatus from each station. Additional firefighters and apparatus are required to complete the full alarm assignment for larger structure fires. These resources are obtained from call back of career, community firefighters and mutual/automatic aid from surrounding departments.

NFPA 1710 recommends an effective response where the first arriving fire apparatus should arrive within 395 seconds, 90% of the time and the ERF of 16 firefighters within 635 seconds (10 minutes 35 seconds) 90% of the time for low to moderate-risk residential fires.

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 27 shows the median staff on each incident grouping. This does not include resources from mutual aid partners and reflects the number of OFR staff assigned/available to each incident group, 50% of the time.

Table 27: Median Staff Turnout by Incident Type Grouping

Incident Type	2018	2019	2020	2021	2022	All Years
Alarm No Fire	7	8	6	6	6	**6**
Fire	9	8	7	6	14	**9**
Medical Co-Response	2	2	3	3	4	**3**
Motor Vehicle Incident / Rescue	7	8	5	5	6	**6**
Other Requests for Service	5	7	5	5	5	**5**
All Incident Types	**3**	**7**	**5**	**5**	**5**	**5**

Chart 6: Staff Turnout Distribution (All Incident Types) (2018-2022) across all incident types shows the total number of OFR responders according to the Records Management System. Some data limitations exist in the current tracking system as outliers within the data exceed the total number of OFR firefighters on staff.

Chart 6: Staff Turnout Distribution (All Incident Types) (2018-2022)

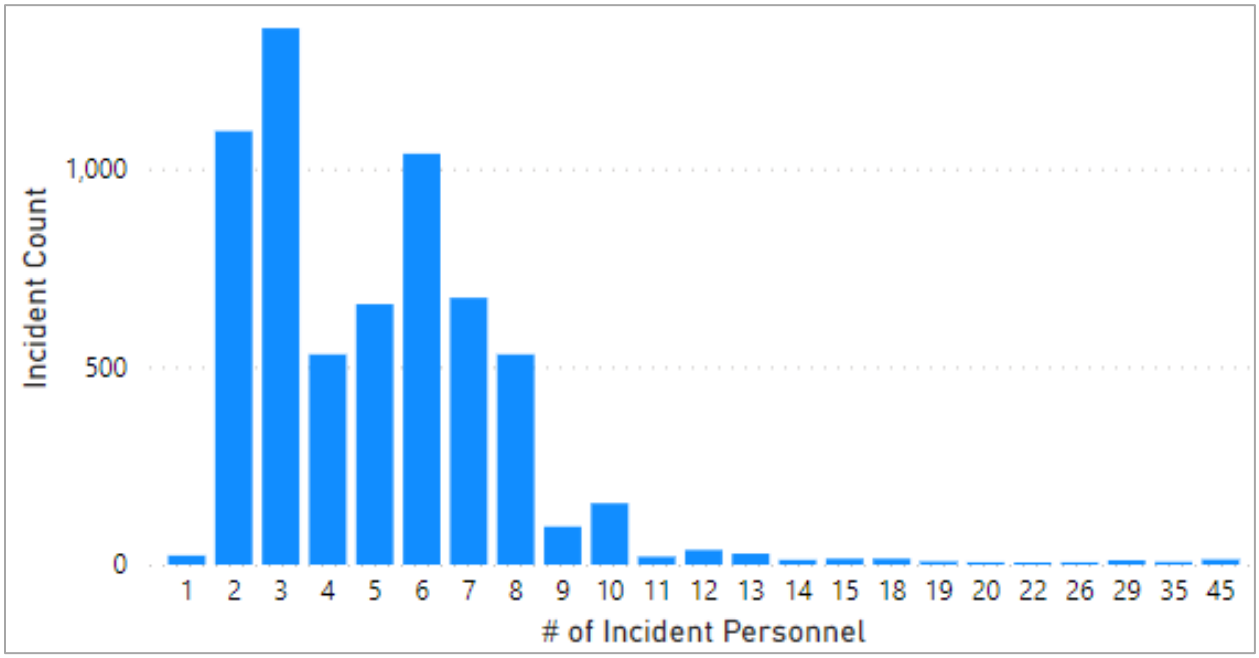


Chart 7: Staff Turnout Distribution (Fire Incidents only) (2018-2022) for Fire incidents shows the total number of OFR responders for those high-hazard events requiring a larger ERF. Some data limitations are noted to exist in the current records management system as outliers within the data that exceeded the total number of OFR firefighters on staff.

Chart 7: Staff Turnout Distribution (Fire Incidents only) (2018-2022)

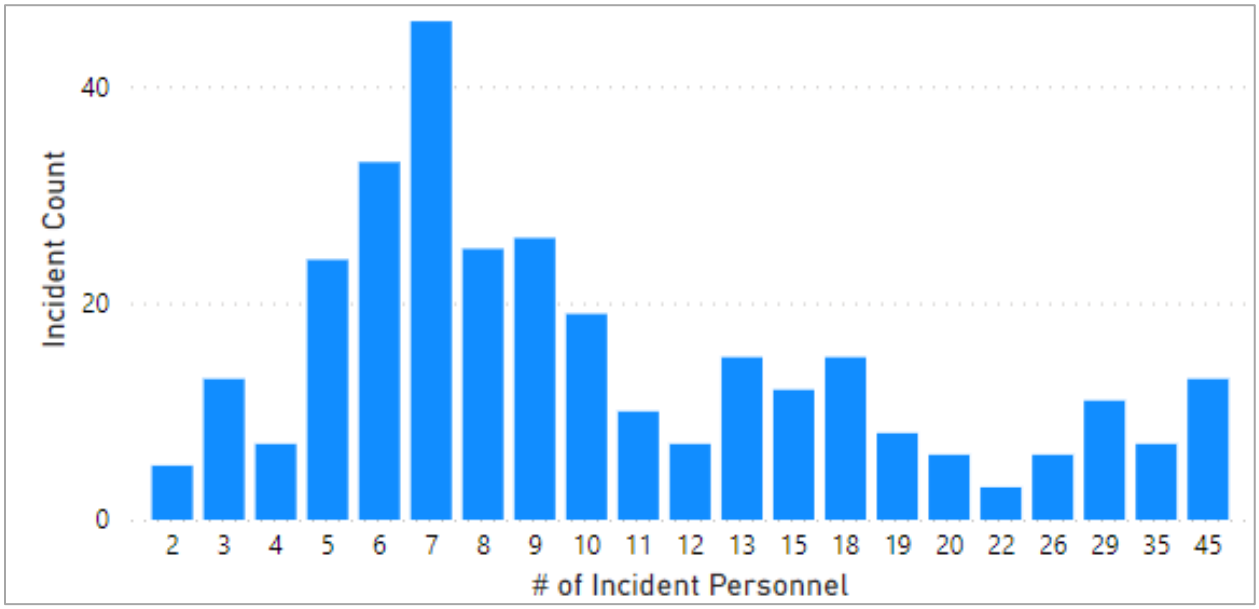


Table 28: 90th Percentile Response Performance by Incident Type (in secs) (2018-July 2023) with Median Staffing

Incident Type	2018	2019	2020	2021	2022	2023 (Jan-Jul)	All Years	Median Staffing
Alarm No Fire	578	537	543	632	602	626	**583**	**6**
Fire	604	737	783	793	595	693	**693**	**9**
Medical Co-Response	753	697	691	507	546	523	**667**	**3**
Motor Vehicle Incident/Rescue	1027	638	631	611	647	648	**644**	**6**
All Other Requests	691	624	673	659	665	697	**675**	**5**
All Incident Types	**723**	**654**	**658**	**596**	**597**	**597**	**645**	**5**
NFPA 384 sec compliance	27%	31%	41%	51%	45%	45%	40%	-
10 min (600 sec) compliance	78%	82%	86%	90%	90%	90%	86%	-
4 FFs within 10 mins (Fire only)	78%	55%	47%	16%	54%	47%	52%	-
4 FFs within 10 mins (All Incidents excl. medical)	52%	43%	35%	34%	49%	50%	46%	-

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

- Although OFR appears to be meeting the 10-min. response time goal 90% of the time since 2021, they are not arriving with the established minimum number of staff to conduct fire suppression initial response. Only 52% of calls over the studied timeframe had 4 firefighters arrive within 10 mins. from a high of 78% in 2018 to a low of only 16% in 2021.
- OFR has not been able to meet recommended ERF staffing for low frequency, high hazard events and must rely on mutual aid resources to supplement the number of firefighters.
- The NFPA target of 384 secs. for the arrival of the first engine was met 40% of the time over the period.
- Median staffing of 3 for Medical Co-Response would satisfy an ERF for supporting EMS.

Despite arriving within the 10-min. target response time the current minimum staffing level of four firefighters cannot be consistently achieved. The establishment of the standards of response coverage that include a critical task analysis is previously noted in Sections 3 & 4.

4.7 Critical Task Analysis

The purpose of completing a critical task analysis is to consider whether OFR 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).

As already discussed, OFR has an initial response of four firefighters for a structure fire. Any additional resources, either firefighters or apparatus, requires activation of a second station, call-in of community firefighters, or mutual/ automatic aid. This limitation will decrease the effectiveness of the response and increase intervention time. Four fighters are limited in the number and types of critical tasks they safely complete in a timely fashion. The following critical task assignments are offered as examples of the critical tasks required for the most common low, moderate, and high-risk incident types.

Table 29: Low Risk (no exposures): garbage, vehicle – private, grass, investigate (external), monitoring alarm (w/o confirmation)

Initial Deployment	No. FF	Task Assignment
Engine plus command	4	Incident Command, Scene Safety, Size-up, Accountability, Water Supply, 360 assessment, Forcible Entry, Primary Search, Fire Control, Incident Stabilization
Total Personnel	**4**	

Table 30: Moderate Risk: Attached garage, single-family residential (detached/duplex)

Initial Deployment	No. FF	Task Assignment
Engine plus command	4	Incident Command, Scene Safety, Size-up, IAP Development, Accountability, Resource Determination, Water Supply, 360 assessment, Forcible Entry, Primary Search, Fire Control, Incident Stabilization
Ladder (if available)	2	Scene Safety, Water Supply, Aerial Operations, On-deck Assignment, Primary Search, Fire Control
Rescue	2	Scene Safety, On-Deck, Primary/Secondary Search, Fire Control
2nd Engine	4	Scene Safety, Water Supply, On-deck Assignment, Primary Search, Fire Control
District chief	1	Transfer of Command, Scene Safety, IAP Confirmation and Evaluation, Accountability, Resource Management.
Total Personnel	**17**	

Table 31: Moderate Risk: Motor vehicle crash (1-3 private vehicles)

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

Table 32: Moderate Risk (with exposures): grass/wildland/brush

Initial Deployment	No. FF	Task Assignment
Bush Buggy	4	Incident Command, Scene Safety, Size-up, IAP Development, Accountability, Resource Determination, Water Supply, Fire Control, Incident Stabilization
Tender	2	Water Supply
Engine	4	Firefighters for Suppression
District Chief	1	Transfer of Command, Scene Safety, IAP Confirmation and Evaluation, Accountability, Resource Management
Total Personnel	**11**	

Table 33: Moderate Risk: Small quantity (<20 L) of known product (gasoline, anti-freeze)

Initial Deployment	No. FF	Task Assignment
Engine	4	Incident Command, Scene Safety, Size-up, IAP Development, Accountability, Resource Determination, Water Supply, 360 assessment, Forcible Entry, Incident Stabilization
Hazmat Unit	4	• Hazard and risk evaluation • Selection of PPE • Information management and resource coordination • Implement response objectives • Decontamination and clean up operations • Terminate the incident
Total Personnel	**8**	

Table 34: High Risk: Commercial, seniors' home, industrial, strip mall, mid-rise residential

Initial Deployment	No. FF	Task Assignment
Ladder (if available)	4	Aerial Operations, Forcible Entry, Primary Search, Fire Control, Incident Stabilization
Engine	4	Primary Search, Fire Control
Engine	4	Establish uninterrupted water supply to building and crews
Rescue	4	Primary/Secondary Search, Fire Control
Engine	4	Primary Search, Fire Control, ventilation
Incident Command	2	Transfer of Command, Scene Safety, IAP Confirmation and Evaluation, Accountability, Resource Management
Engine	**4**	**Establish rapid intervention crew, manage rehab area**

Table 35: High Rise: High Rise Residential greater than 23m

Initial Deployment	No. FF	Task Assignment
Ladder (if available)	4	Aerial Operations, Forcible Entry, Primary Search, Fire Control, Incident Stabilization
Engine	4	Scene Safety, Water Supply, On-deck Assignment, Primary Search, Fire Control
Engine	4	Establish uninterrupted water supply to building and crews
Rescue	4	Primary/Secondary Search, Fire Control
Engine	4	Primary/Secondary Search, Fire Control
Engine	4	Scene Safety, Water Supply, On-deck Assignment, Primary Search, Fire Control
Engine	4	Evacuation management
Engine	4	Staging area below fire floor
Engine	4	Ventilation
Incident Command	2	Transfer of Command, Scene Safety, IAP Confirmation and Evaluation, Accountability, Resource Management
Engine	4	Establish rapid intervention crew, manage rehab area
Total Personnel	**42**	

Observation #30: 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. As discussed in Observation #24 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 OFR currently has available.

Recommendation #30: Complete a critical task analysis as part of the standards of cover response policy.

Suggested completion: *6-24 months*

Cost: *Neutral*

Resource: *Staff time*

Rationale: *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."

4.8 Measuring, Managing and Reporting Performance

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. Town Council is the authority having jurisdiction over establishing service levels. Senior administration and the fire chief should provide city 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. OFR has recently implemented PowerBI[17] to complement their FirePro RMS system which supports this functionality.

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.

Table 36 provides some examples of key performance indicators (KPIs) or supporting information that should be considered on each type of dashboard. Wherever possible, providing both the current values and the corresponding trend can provide valuable insight if corrective action is needed.

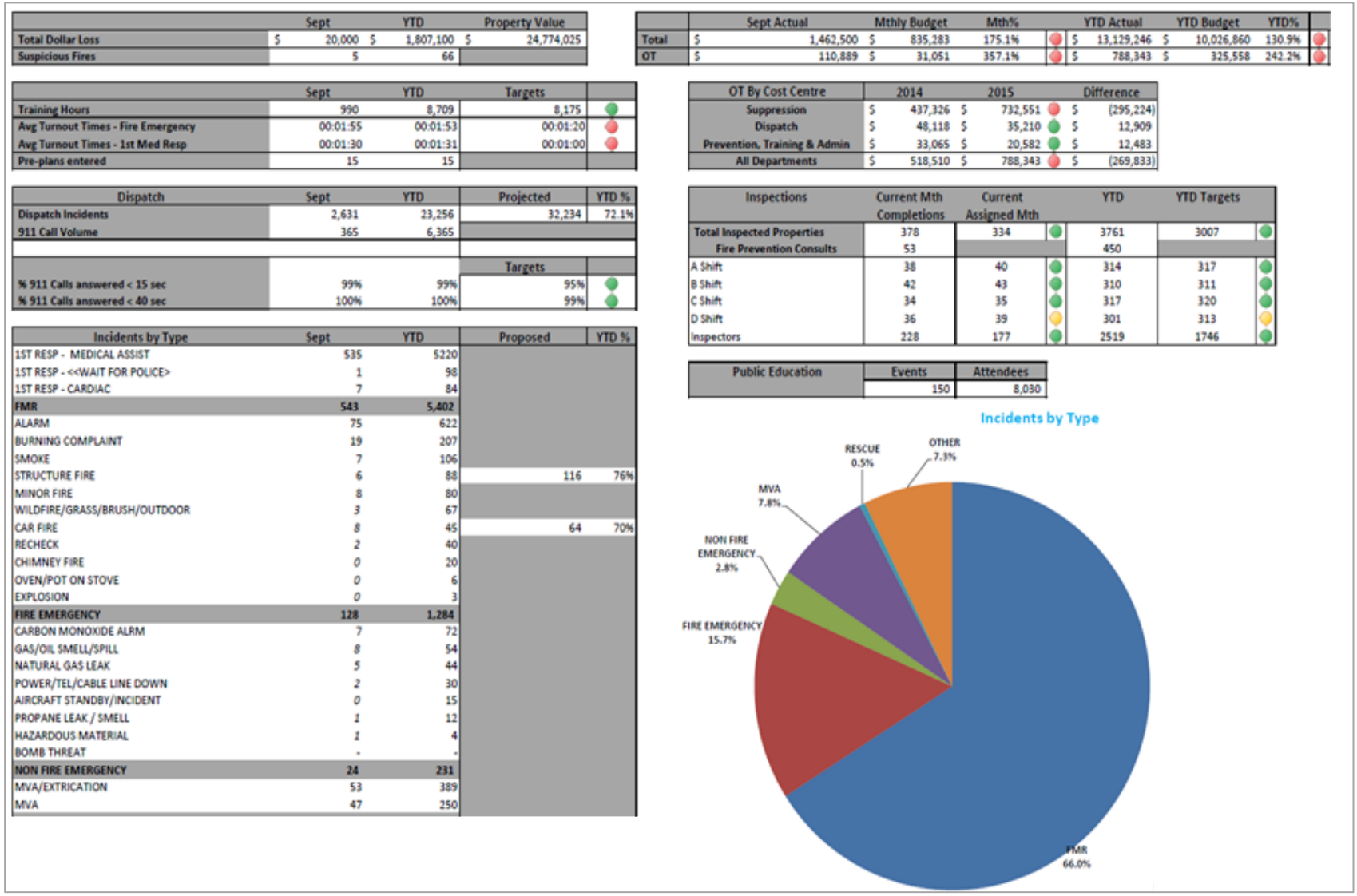
[17] *Power BI - Data Visualization | Microsoft Power Platform*

Table 36: 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
Alberta Building Code 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

Figure 8: Sample Performance Dashboard provides an example of the performance metrics that could be routinely reported. Performance reporting needs to be timely and relevant to promote process improvement strategies. This type of reporting may be useful in supporting OFR's efforts to improve chute time.

Figure 8: Sample Performance Dashboard



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

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

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

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

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

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

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

Public Education	Events	Attendees
	150	8,030

Observation #31: OFR initiated the implementation of the PowerBI dashboards and tools to enhance reporting. Process issues with the manual entry of incident data increase the complexity of data transformations and errors into the PowerBI system related to multiple records that are generated in FirePro for a single incident. This resulted in data accuracy issues for complex event records.

Recommendation #31a: Develop key performance metrics for audience-specific performance dashboards such as forefront-line staff, leadership, and governance.

Suggested completion: *12 - 24 months*

Cost: *Neutral*

Resource: *Staff time*

Rationale: *This problem should be resolved with the future transition to a new records management system. As the authority having jurisdiction in establishing fire department service levels, city councils receive an annual or biannual report. The report should contain relevant and timely incident frequency and performance metrics. The performance metrics should include a report on compliance with council-approved service levels. It is difficult for a city council to evaluate their service levels without this information.*

Additionally, front-line staff need to see regular reporting of their performance comparatively at both the station and shift levels. This is the best way to reinforce positive improvements and identify areas for improvement.

Recommendation #31b: Continually monitor the incident data in the records management system with a specific focus on complex, multi-station incidents to ensure accuracy of apparatus times and staffing numbers.

Suggested completion: *12 - 24 months*

Cost: *Neutral*

Resource: *Staff time*

Rationale: *Regular audits can identify process gaps or staff requiring updated documentation training to ensure accurate records are being captured in the system. Having strong reporting begins with strong data structures and clear, simple processes for entering data after an event. With careful consideration of database, table, and entry form design, data entry errors can be minimized and make report writing easier for technical staff. The delineation of different types of dollar loss fires (structure, vehicle, wildland) would also be beneficial to better understand the types of fire events in the community.*

SECTION 5
CONCLUSION

This Fire Services Master Plan is intended to assist the Town of Okotoks and Okotoks Fire & Rescue (OFR) in evaluating the current service delivery model and develop a strategy to inform future investments in fire, rescue, and emergency services. The plan involved a comprehensive analysis of all key elements of service delivery. The analysis included a review of the operational and administrative aspects of the OFR, community profile and risks, staffing, core services and program delivery, training, recruitment and retention, facilities, and major equipment.

Further, OFR response data was assessed with a focus on the current performance, capabilities, and alignment with both existing and projected risks and levels of demand. There are several observations and recommendations provided in this master plan to improve operational effectiveness and efficiencies. Key among the 31 Observations and 32 Recommendations is:

- Establish a regulation or bylaw for all new developments that enforces compliance with the NBC-AB19's limiting distance and fire department response requirements.
- Establish the following three new OFR positions, Administrative Officer, Training Officer, and Community Safety Officer.
- Determine the optimal operational staffing level to sustain the core service performance expectations.
- Phase out the community firefighter program.
- Increase the OFR full-time staffing complement to 60
- Establish a Standards of Cover document that details Council approved core services, standards, and performance levels.
- Determine the appropriate level of specialized rescue training that aligns with the community risk assessment.
- Develop a fire suppression water delivery plan for response zones without available fire hydrants that ensure an uninterrupted water supply.
- Establish a regular communication process between OFR and FRESC dispatch Centre and undertake the transition to NG911.
- Identify alarm handling process improvement opportunities and benchmarks.
- Formalize the pre-alerting of the appropriate fire station once the location and card type are known and document the timestamp that the fire department was notified.
- Monitor travel time as a key contributor to overall response time and investigate future opportunities to reduce travel time such as traffic light pre-emption, relocating or adding additional fire stations, or roadway design opportunities as development expands.

Although each recommendation has a corresponding timeframe, it is important to note this Fire and Rescue Services Master 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 OFR to mitigate and manage community risks, monitor response capabilities and performance amidst anticipated community growth, and maintain excellent community relationships and value for money.

It is important to note that our interactions with the staff revealed a highly professional and dedicated organization that is committed to providing the best possible service to the citizens of the Town of Okotoks.

APPENDICES

Appendix A: Glossary of Terms 161
Appendix B: List of Figures, Maps, Images and Tables 163
Appendix C: Theoretical Response Mapping Methodology 165
Appendix D: Online Firefighter Survey Results 169
Appendix E: Job Descriptions 183
Appendix F: Apparatus and Light Duty Vehicles 188

Appendix A: Glossary of Terms

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

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

Appendix B: List of Figures, Maps, Images and Tables

Figures

Figure 1: Fire Services Master Plan Process 3
Figure 2: Risk Evaluation Matrix 18
Figure 3: Okotoks Fire and Rescue Services Organization Chart (2023) 31
Figure 4: Fire Service Time Management 33
Figure 5: Fire Apparatus Life Cycle Cost Projection – EXAMPLE ONLY 91
Figure 6: Fire Propagation Curve 117
Figure 7: Response Time Continuum 129
Figure 8: Sample Performance Dashboard 156

Maps

Map 1: Town of Okotoks Overview 8
Map 2: 10-Minute Response Coverage Based on Actual Response Times 111
Map 3: 10-Minute Response Coverage Based on Leading Practice 112
Map 4: 8-minute total response from each station (336-second travel time) 119
Map 5: 6:24 min total response time (240 sec travel time) 121
Map 6: 10-Minute Theoretical Response Coverage 143
Map 7: 10 – Minute Response Coverage Based on Leading Practice Response Times 145
Map 8: Emergency Incident Density Map 146

Images

Image 1: Risk Management Process 15

Charts

Chart 1: Incident Frequency by Percentage (2018-2022) 123
Chart 2: General Incident Trends 124
Chart 3: Dispatch Initial Incident Classification of Fires (2018-2022) 126
Chart 4: Incidents by Time of Day (2018-2022) 127
Chart 5: Incidents by Day of Week (2018-2022) 127
Chart 6: Staff Turnout Distribution (All Incident Types) (2018-2022) 148
Chart 7: Staff Turnout Distribution (Fire Incidents only) (2018-2022) 148

Tables

Table 1: Targeted Interview List 4
Table 2: Community Risk Assessment (CRA) summary of key findings 13
Table 3: Sample Risk Inventory 19
Table 4: Town of Okotoks Building Inventory by Property Type 21
Table 5: Fire Apparatus Service Schedule (Fire Insurance Grading) 86

Table 6: Fire Apparatus Life Cycle Cost Projection Example 90
Table 7: OFR Apparatus and Light Vehicles with Planned Replacement Schedule 92
Table 8: Participating Community Comparatives 99
Table 9: Community Comparative Departments' Profile 101
Table 10: Community Comparative Budget Ranking 102
Table 11: Community Comparative Standard of Cover 103
Table 12: Examples of Incident Types for Statistical Analysis 104
Table 13: Municipal Comparative Response Call Volume (2019 – 2023) 105
Table 14: Incident Count by Category (2018-2022) 122
Table 15: Incident Count by Subcategory (2018-2022) 125
Table 16: NFPA 1710 Performance Standards 130
Table 17: 90th Percentile Alarm Processing by RMS Incident Type (in secs) * 133
Table 18: 90th Percentile Alarm Processing by Initial Dispatch Categorization Incident Type (in secs) 134
Table 19: 90th Percentile Assembly Performance by Incident Type (in secs) 136
Table 20: 90th Percentile Assembly Performance by Shift (in secs) (2018-2022) 136
Table 21: 90th Percentile Travel Performance by Incident Type by Year (in secs) 138
Table 22: 90th Percentile Travel Performance by Incident Type by Shift (in secs) (2018-2022) 138
Table 23: 90th Percentile Response Performance by Incident Type (in secs) (2018-July 2023) 139
Table 24: 90th Percentile Response Performance by Incident Type (in secs) (2018-2022) 140
Table 25: 90th Percentile Response Performance by Shift (in secs) (2018-2022) 141
Table 26: 90th Percentile Shift Response Performance by Year (in secs) (2018-2022) 141
Table 27: Median Staff Turnout by Incident Type Grouping 147
Table 28: 90th Percentile Response Performance by Incident Type (in secs) (2018-July 2023) with Median Staffing 149
Table 29: Low Risk (no exposures): garbage, vehicle – private, grass, investigate (external), monitoring alarm (w/o confirmation) 150
Table 30: Moderate Risk: Attached garage, single-family residential (detached/duplex) 150
Table 31: Moderate Risk: Motor vehicle crash (1-3 private vehicles) 151
Table 32: Moderate Risk (with exposures): grass/wildland/brush 151
Table 33: Moderate Risk: Small quantity (<20 L) of known product (gasoline, anti-freeze) 151
Table 34: High Risk: Commercial, seniors' home, industrial, strip mall, mid-rise residential 152
Table 35: High Rise: High Rise Residential greater than 23m 152
Table 36: Sample KPIs by Dashboard Audience 155

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 MVI, spill contaminants, etc.
   iv. Assists in the definition of the map for locational awareness by others
   v. Completes the map

B. Single Line Road/Transportation Network
   i. Used to determine response times from emergency locations to determine a network based on road speeds
   ii. Roads are created into a network for response

C. Railways
   i. Identified risk areas for impeding response time when crossing a roadway or proximity to municipal areas will also determine the response and apparatus used for a derailment response or other rail emergency or risks, such as chemical spill evacuations.

D. Municipal Boundaries

i. Identifies the limits to response for mutual aid and responsibilities when overlaps occur within a response area. Also identifies sub areas for specific mapping and identification of municipal and regional response zones. Provides information for gap analysis for future state locations or refinement of locations.

E. Parks

i. Identifies the potential risk areas due to accessibility issues for tracts of land, as well as constraints and opportunities for new locational analysis for or against new stations within a municipality. Ability to determine development of new locations due to proximity. Parks are identified as local, regional, provincial, and national.

F. Projection File

i. To ensure that we have the same data set up as being used by the Municipality or Client, measurements (both distance and time) and spatial location are correct when determining analysis.

G. Orthophoto (GeoTIFF, Mr.SID), if available

i. We typically do not use the ortho on the output maps, but the analysis sometimes needs clarification of what is on the ground, and we use it to quickly ground truth locations and information needed prior to asking clients for clarification, or to substantiate clarification of an area.

ii. Is a nice to have, yet hard to use, as it takes up a lot of memory/space and is difficult to ship/transfer.

H. Emergency Services Locations

i. Identify the actual location rather than a theoretical location based on an address match to ensure that the data location is as correct as possible, and no mis-locations are identified on the initial running of the theoretical response times.

ii. Locations may be moved from within a parcel to the front of the parcel whereby it touches the road network. Ensures the response from the station is captured. There are no corrections made to the movement of station to time, as it is typically within 50 metres.

Theoretical Response Zone

A. Assumptions

i. Weather is average – no storms, rain, snow etc.

ii. Roadway segments contain a node/junction at intersections

- If not available, road network needs to be cleaned and fixed

iii. Roadways need to sometimes extend beyond some municipalities

iv. Emergency responders are trained on response vehicles

v. Response vehicles are in good condition

vi. Roads are dry and in good condition

vii. Left turns are not reduced by a time %

viii. Road speeds are provided by client, if not
- Road class table used to populate speeds based on road classification
- Road speeds are reduced from the posted sign, typically no more than 5%

ix. Traffic volume is average, there is no congestion or there is a free-flowing lane to be used

x. Rail crossings are free to cross and do not impede response

xi. Time of day is based on an average time from 9 am – 9 pm

xii. Opticoms (or similar product for traffic light manipulation) are present to allow for free moving response

xiii. Intersections of roads are not reduced (the roads are reduced from other project limits and averaged over time for generality of best fit)

xiv. School zones are not adjusted unless identified, then changes to road net are made

B. Response Time

i. Customized response based on Emergency Services Input

ii. Response time includes 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 mutual aid

iii. Identify gaps in response

iv. Aid in the development of Fire Zones for response

v. Assist in the identification of new stations

vi. Also identifies needs to move stations to another location, as required

Additional Analysis

A. Out-of-Scope Analysis (needs further discussion with client)

i. Transition from project to operationally based:
- Specific distance and travel
- Based on time of day
- Based on time of year
- Call volume
- Call types
- Modeling
- Scripting for batch work

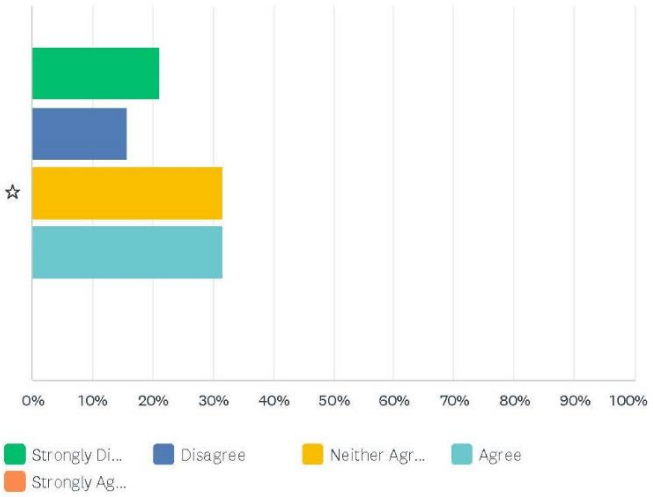
B. Data Availability
   i. When data available from clients is detailed enough, it is used
   ii. Not all data is detailed enough, and assumptions are made

C. Analysis
   i. Additional analysis can be performed (as reduction of road speeds to an intersection)
      - For above example, identification of intersections can be complex, and data not always available:
        - Stop Sign
        - 3-Way Stop
        - Yield
        - Lights
        - Flashing Light
   ii. Tends to be time consuming
        - Clients not willing to engage cost of this project
        - Levels of data may not be accessible
        - Missing detail
        - Usually is a one-off project and new data is typically not leveraged

Appendix D: Online Firefighter Survey Results

Q1 The public feels they are getting good value for their tax dollars for fire and emergency services.

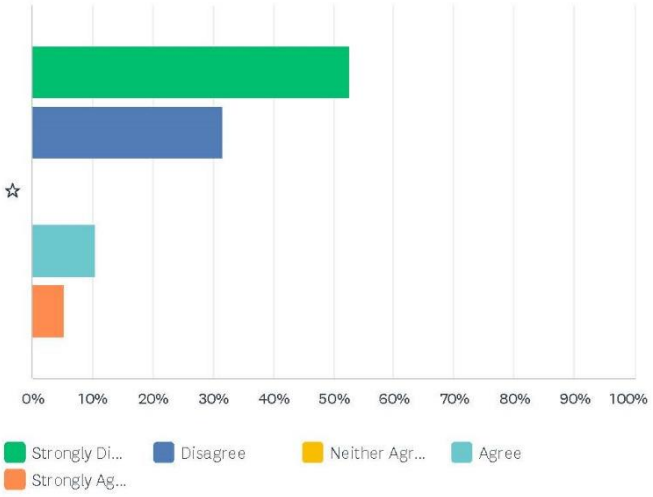
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	21.05% 4	15.79% 3	31.58% 6	31.58% 6	0.00% 0	19	0.00

Q2 The public has a good understanding of the fire service and its capabilities.

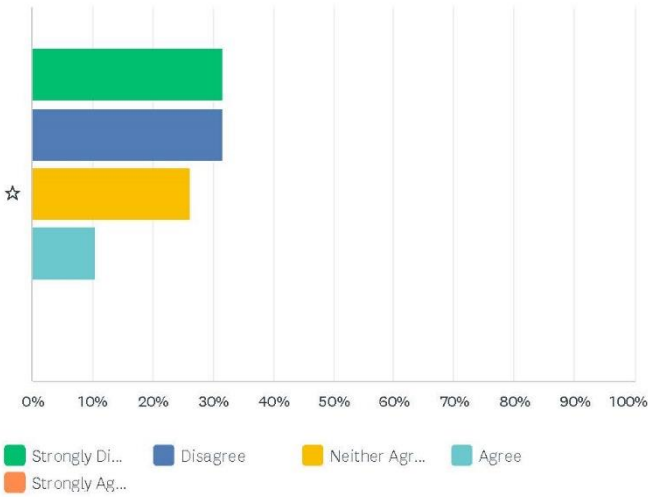
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	52.63% 10	31.58% 6	0.00% 0	10.53% 2	5.26% 1	19	0.00

Q3 Your community receives adequate fire/rescue protection.

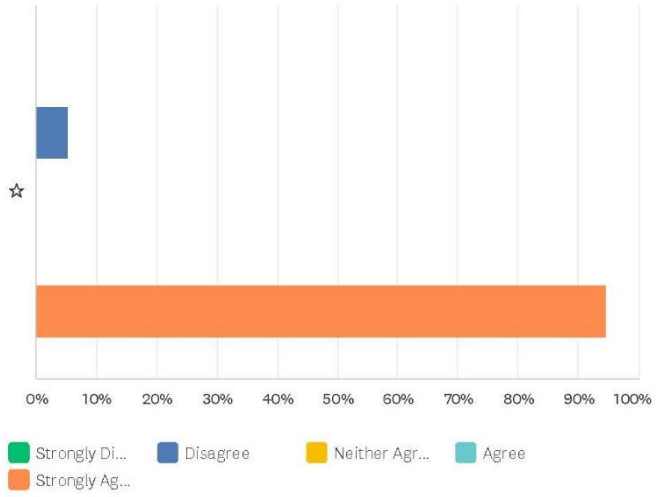
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	31.58% 6	31.58% 6	26.32% 5	10.53% 2	0.00% 0	19	0.00

Q4 Based on the rate of community and economic growth, fire service demands will increase in the future.

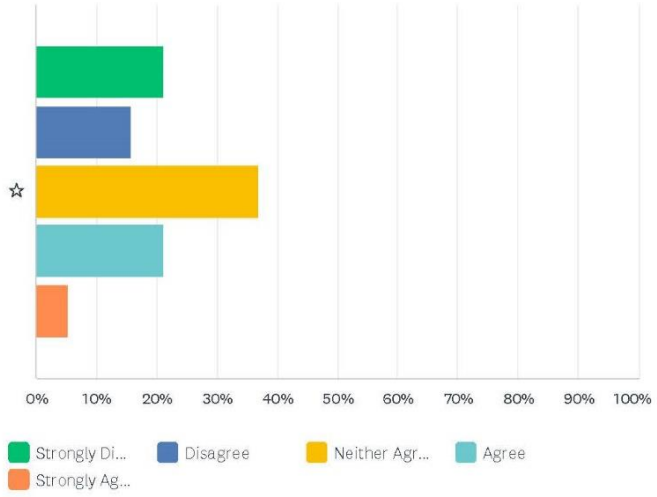
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE OR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	0.00% 0	5.26% 1	0.00% 0	0.00% 0	94.74% 18	19	0.00

Q5 The community has adequate alternate fire risk reduction strategies (e.g. residential sprinklers, FireSmart program, public education).

Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	21.05% 4	15.79% 3	36.84% 7	21.05% 4	5.26% 1	19	0.00

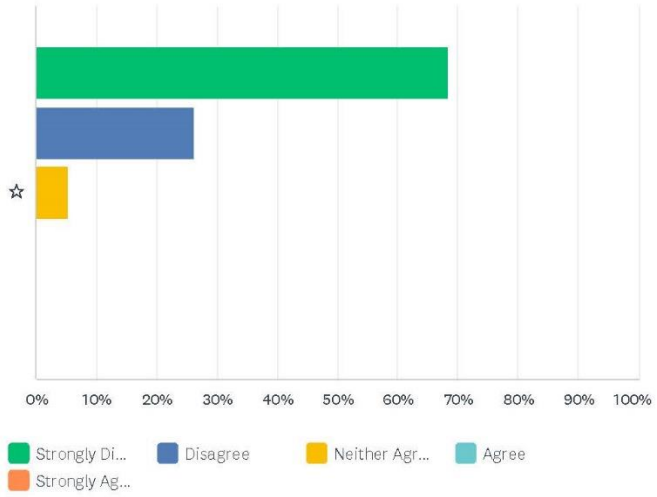
Q6 What are the top 5 risks to your community based on your community risk assessment?

Answered: 19 Skipped: 0

ANSWER CHOICES	RESPONSES	
#1	100.00%	19
#2	94.74%	18
#3	89.47%	17
#4	78.95%	15
#5	68.42%	13

Q7 The fire service's current response model is adequately staffed for fire/rescue response.

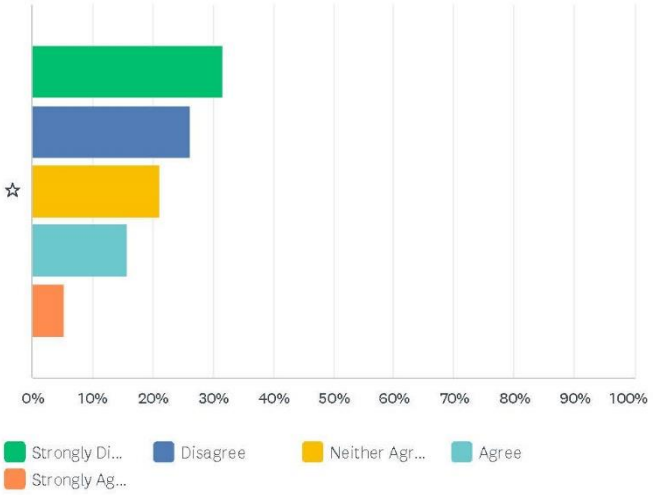
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	68.42% 13	26.32% 5	5.26% 1	0.00% 0	0.00% 0	19	0.00

Q8 The fire service's policies/procedures reflect fire/rescue industry best practices.

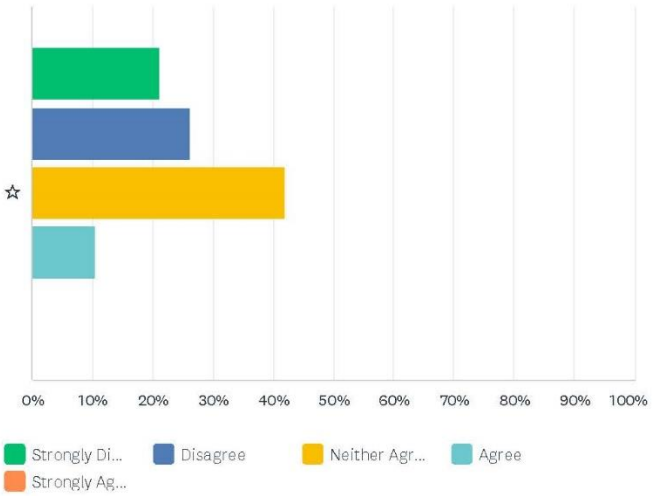
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	31.58% 6	26.32% 5	21.05% 4	15.79% 3	5.26% 1	19	0.00

Q9 Medical responses are over tasking the service's response capacity.

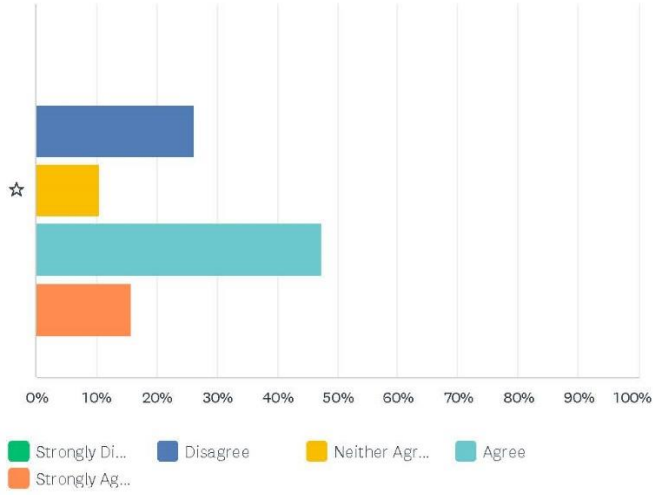
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	21.05% 4	26.32% 5	42.11% 8	10.53% 2	0.00% 0	19	0.00

Q10 Your fire service experiences a high rate of turnover.

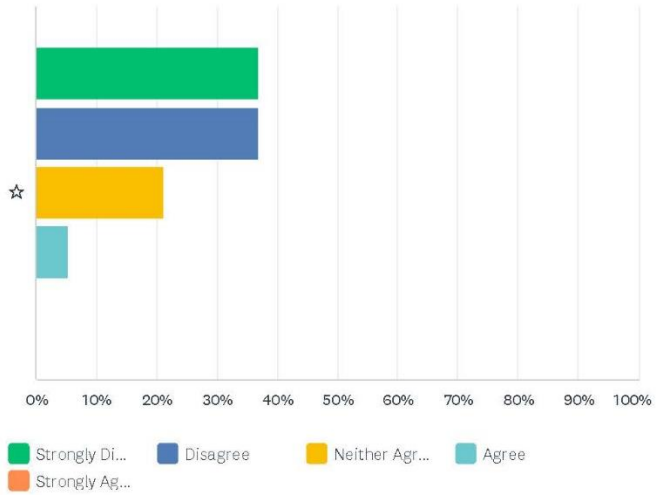
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	0.00% 0	26.32% 5	10.53% 2	47.37% 9	15.79% 3	19	0.00

Q11 Your current recruiting program is effective.

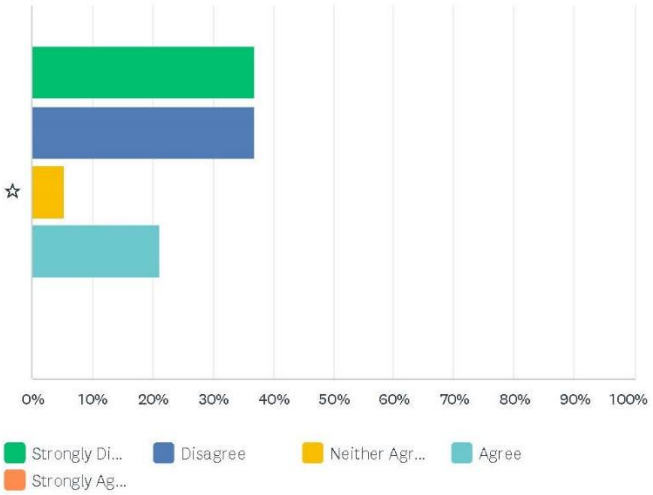
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	36.84% 7	36.84% 7	21.05% 4	5.26% 1	0.00% 0	19	0.00

Q12 The current level of live-fire and specialty team training is adequate for the services provided.

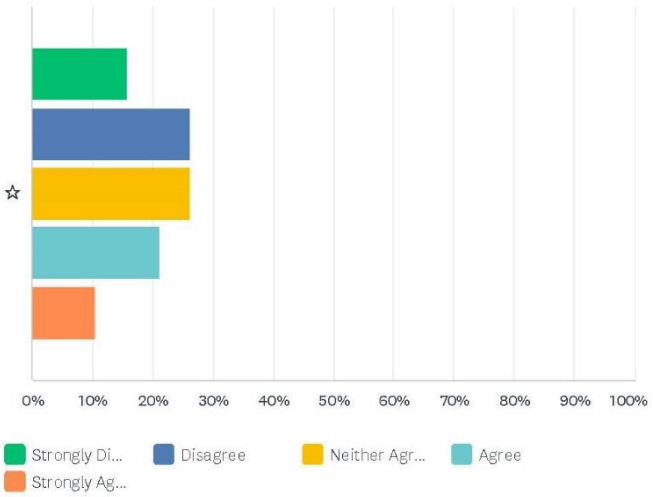
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	36.84% 7	36.84% 7	5.26% 1	21.05% 4	0.00% 0	19	0.00

Q13 The current level of theoretical fire/rescue or leadership training you receive is adequate.

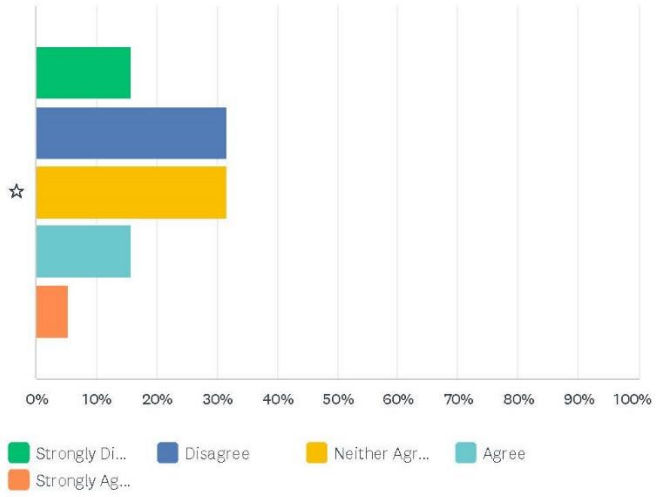
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	15.79% 3	26.32% 5	26.32% 5	21.05% 4	10.53% 2	19	0.00

Q14 You receive adequate training to maintain competencies and certifications.

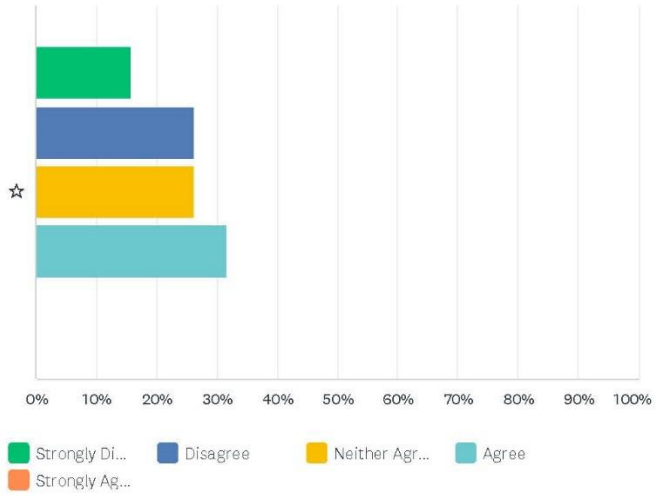
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	15.79% 3	31.58% 6	31.58% 6	15.79% 3	5.26% 1	19	0.00

Q15 Recruits are adequately trained before they are assigned to full duty.

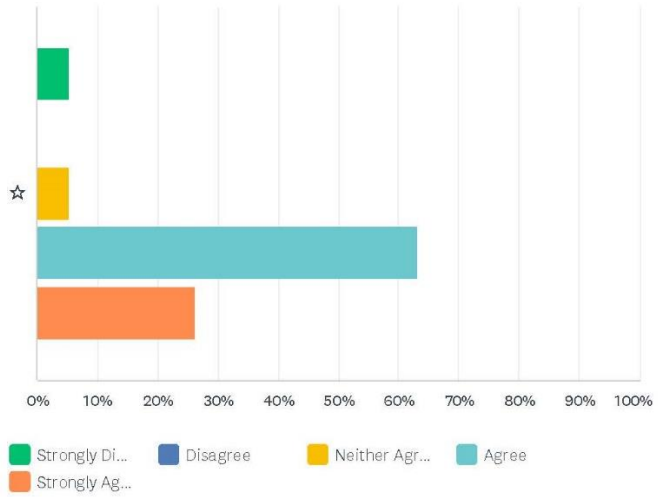
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	15.79% 3	26.32% 5	26.32% 5	31.58% 6	0.00% 0	19	0.00

Q16 The service is adequately resourced with small equipment (i.e. SCBA, light duty vehicles, loose equipment and consumables).

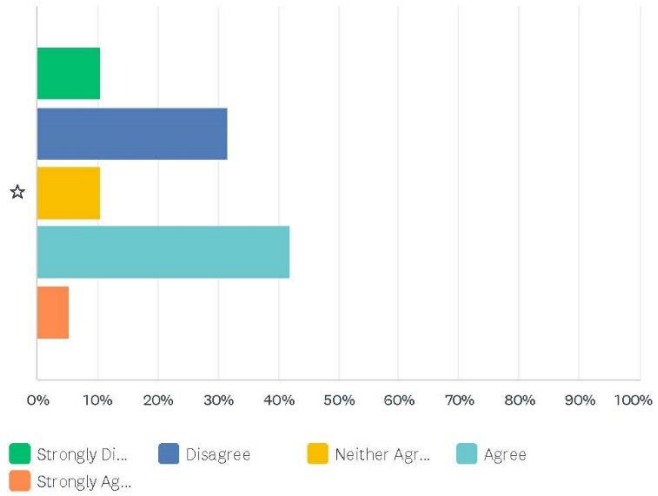
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	5.26% 1	0.00% 0	5.26% 1	63.16% 12	26.32% 5	19	0.00

Q17 The current vehicle fleet of fire apparatus provides the capacity/capability necessary to meet the demands and types of responses.

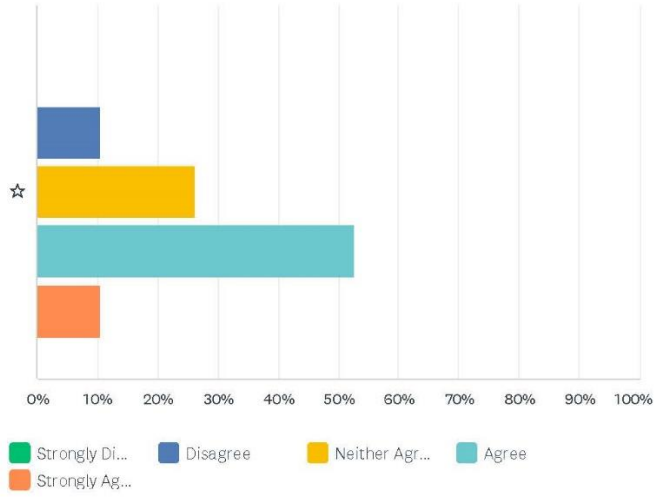
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	10.53% 2	31.58% 6	10.53% 2	42.11% 8	5.26% 1	19	0.00

Q18 Fire apparatus are appropriately life-cycled.

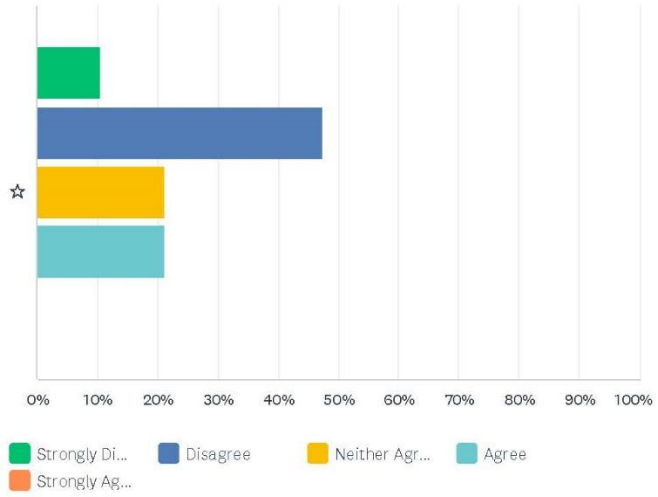
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	0.00% 0	10.53% 2	26.32% 5	52.63% 10	10.53% 2	19	0.00

Q19 The maintenance of fire apparatus is adequate.

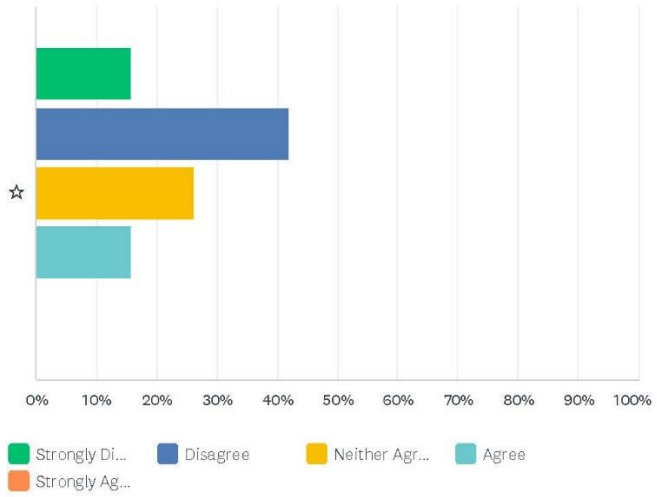
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	10.53% 2	47.37% 9	21.05% 4	21.05% 4	0.00% 0	19	0.00

Q20 The current fire station is functional and meets the operational requirements of the department.

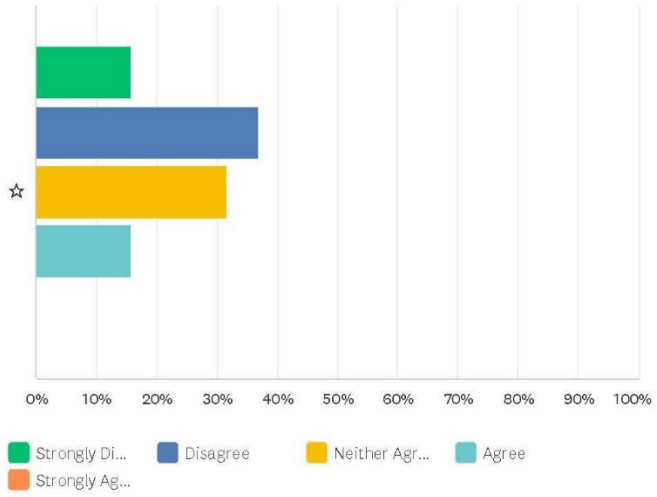
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	15.79% 3	42.11% 8	26.32% 5	15.79% 3	0.00% 0	19	0.00

Q21 The current fire station is strategically located for adequate geographic coverage.

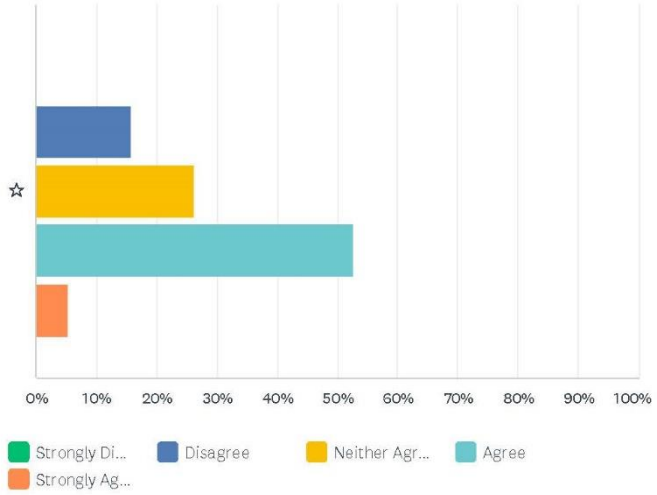
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	15.79% 3	36.84% 7	31.58% 6	15.79% 3	0.00% 0	19	0.00

Q22 The service keeps pace with leading technology in communications systems.

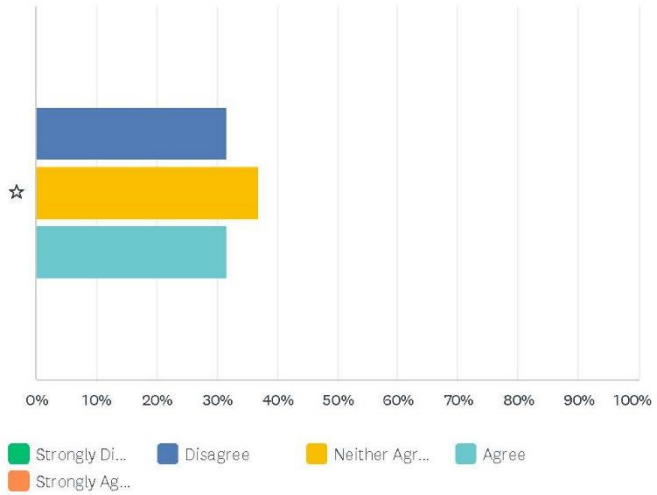
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	0.00% 0	15.79% 3	26.32% 5	52.63% 10	5.26% 1	19	0.00

Q23 The service keeps pace with leading technology in records management system and mobile CAD systems.

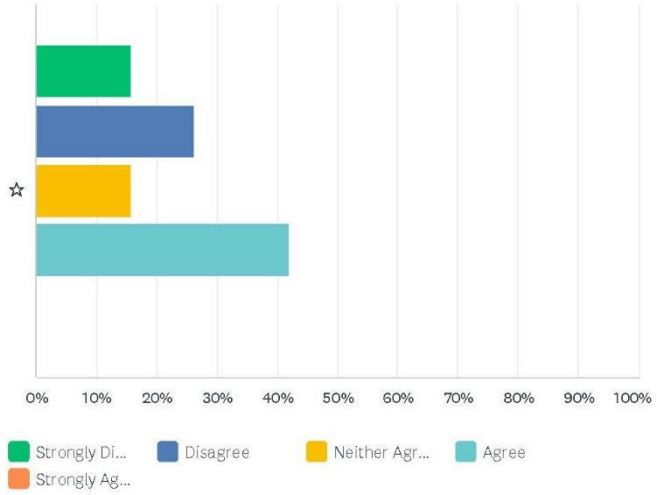
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	0.00% 0	31.58% 6	36.84% 7	31.58% 6	0.00% 0	19	0.00

Q24 The service keeps pace with leading technology in station alerting and pre-alerting.

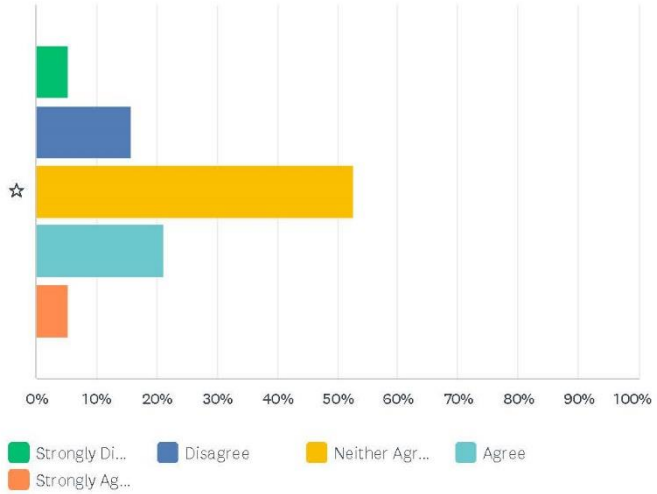
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	15.79% 3	26.32% 5	15.79% 3	42.11% 8	0.00% 0	19	0.00

Q25 The service keeps pace with leading technology in records management and fire reporting systems.

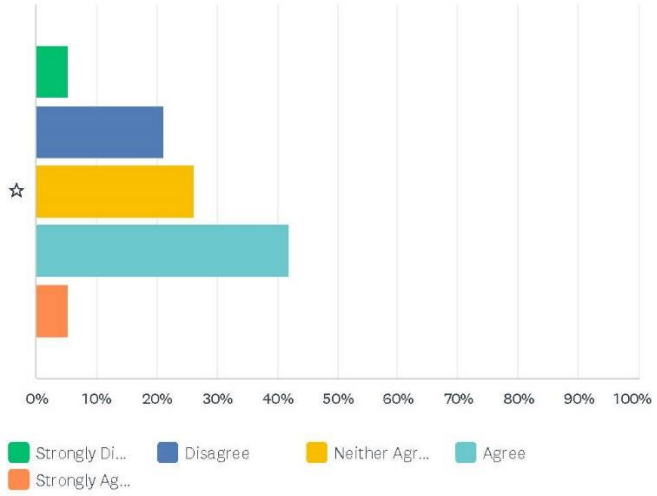
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	5.26% 1	15.79% 3	52.63% 10	21.05% 4	5.26% 1	19	0.00

Q26 The service keeps pace with leading technology in online learning management systems (LMS).

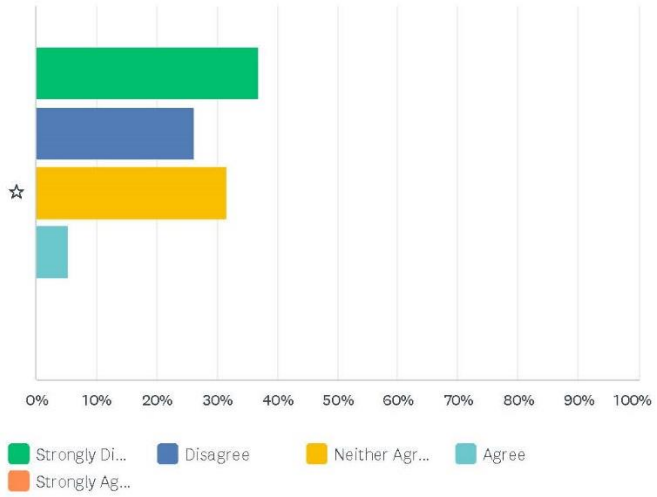
Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	5.26% 1	21.05% 4	26.32% 5	42.11% 8	5.26% 1	19	0.00

Q27 The service keeps pace with leading technology in traffic pre-emption system.

Answered: 19 Skipped: 0



	STRONGLY DISAGREE	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	STRONGLY AGREE	TOTAL	WEIGHTED AVERAGE
☆	36.84% 7	26.32% 5	31.58% 6	5.26% 1	0.00% 0	19	0.00

Appendix E: Job Descriptions

JOB TITLE:	**Deputy Fire Chief**
CLASSIFICATION	Management – Level 2
REPORTS TO:	Fire Services Manager
BUSINESS UNIT:	Protective Services – Fire Services
DATE COMPLETED:	August 2017

JOB SUMMARY: *Provide up to four sentences describing the jobs core purpose.*

The Deputy Fire Chief is responsible for assisting the Fire Services Manager in providing leadership for all aspects of the Fire and Rescue Services business centre, including short and long term planning, daily operations, and its physical, financial and human resources. Fire operations includes: provision of fire suppression, fire protection, rescue, fire safety inspections and enforcement, in-school awareness programs and environmental protection services including toxic roundup and response to toxic spills. In collaboration with the Fire Services Manager, Deputy Chief provides input into the Town's emergency planning.

KEY RESPONSIBILITIES: *Provide a brief description of up to five major responsibilities and approximate percent of time dedicated to each (up to 4 sentences). NOTE: When there are multiple incumbents in a role, percentage of time spent in each responsibility area may vary.*	Approximate Percent of Time
1. **Emergency Operations** – The Deputy Chief will oversee firefighting and rescue operations. Attends emergency scenes as required. Assists with coordination of Disaster Services for the Town, overseeing emergency preparedness.	**20**
2. **Strategy/Planning/Analysis/Administration** – Assist the Manager with ensuring that various educational programs, services and promotion are provided to the public in fire prevention, fire safety and related environmental protection initiatives. Ensure fire inspections and investigations comply with the current Quality Management Plan. Evaluate the deployment and organization of emergency equipment and personnel on an ongoing basis to ensure maximum effectiveness and efficiency. Develop and monitor the implementation of policy, regulations and procedures related to fire and rescue services. Coordinate regular and special training & education sessions for regular and community firefighters to enable them to manage all types of emergency and non-emergency situations. Prepare all necessary reports of all emergency and non-emergency responses for all external agencies concerned as well as various statistical reports on activities and present to appropriate internal and external stakeholders. Ensure that equipment is repaired, upgraded and purchased and that proper maintenance records of apparatus, tools and equipment are maintained. Assist with budget preparation and monitoring.	**50**
3. **Leadership & People Development** – Assist the Manager with overseeing performance management, career development, training, employee recognition and pursuing disciplinary actions for Fire Services personnel. Ensure activities are conducted according to OH&S and Town standards.	**20**
4. **Other Responsibilities:** Under the direction of the Manager, may act as a senior fire representative for the Town when dealing with government agencies, such as the Fire Commissioners Office and Safety Codes Council (Fire) and Alberta Municipal Affairs (QMP, Disaster Services), other organizations and the public. Participate in or lead cross-functional projects. Research Fire related topics and produce reports if required. Liaise and build relationships with external emergency services community.	**10**

EDUCATION: *Provide **minimum** formal education required (degree, diploma, trade, etc.)*

Formal training in: Incident Command; Human Relations and management administration, ICS300, Fire Officer certification. Safety Codes Officer (Fire) minimum Level 1 – Inspector and Investigator. Emergency Medical Responder certification, plus specialty training. Class 3 & 4 drivers' license with Q endorsement. Ability to meet physical fitness standards.

EXPERIENCE: *Provide **minimum** related years and type of experience required.*

8 years of progressively more responsible experience, including supervisory. Experience with: public speaking, knowledge of Alberta Fire Code and building code. Experience dealing with a unionized service and budgeting.

OTHER SKILLS & COMPETENCIES: *Provide other skills and competencies required.*

Excellent public relations, presentation, supervisory, interpersonal oral and written skills are necessary. This is an enforcement position with all the related risks and involves shift work.

JOB TITLE:	**Fire Captain**
CLASSIFICATION	**Technical – Level 5**
REPORTS TO:	Deputy Chief
BUSINESS UNIT:	Protective Services - Fire
DATE COMPLETED:	August 2017

JOB SUMMARY: *Provide up to four sentences describing the jobs core purpose.*

The Fire Captain is responsible for the leadership of firefighters, particularly but not limited to their platoon, and participating in the provision of fire suppression, fire protection, rescue, fire safety inspections and enforcement, educational fire/safety awareness programs and environmental protection services including toxic roundup and response to toxic spills. Provide input regarding the Town's emergency planning to the Fire Services Manager as required.

KEY RESPONSIBILITIES: *Provide a brief description of up to five major responsibilities and approximate percent of time dedicated to each (up to 4 sentences). NOTE: When there are multiple incumbents in a role, percentage of time spent in each responsibility area may vary.*	Approximate Percent of Time
1. **Emergency Operations** – The Fire Captain is responsible for ensuring firefighter readiness to respond to emergencies and providing on-scene coordination & incident command including: fire suppression, emergency scene management, rescue work, assisting with medical care and fire prevention.	60%
2. **Non-Emergency Responsibilities** – Overseeing and participating in: Delivery of various public safety and community education programs and fire safety code inspections. Operation and maintenance of specialized firefighting apparatus, tools and equipment. Assist in the development of training schedules and programs for staff and community firefighters. Supply inventory administration, fleet maintenance, policy development, disaster preparedness. Ensure Fire services building security systems are operating correctly. Co-ordinate and monitor maintenance schedules of all fleet vehicles, all personal protective equipment (PPE), Fleet SCAA, fleet firefighting structural duty gear. Participate in annual maintenance and lifecycle budget and reporting and assigned capital works projects. Provide mentoring and leadership to Fire Services staff and volunteers on a regular and on-going basis. Ensure that safety, sustainability, and environmental methods are utilized in fire services operations. Ensure adherence to all services. Design and provide public education (Fire Extinguishers, school tours, public events). Conduct inspections & investigations. Participate in the development and implementation of specialty teams, water rescue, ice rescue, rapid intervention, equipment purchases and hazmat. Hydrant inspection and testing. Prepare reports for Alberta Fire Commissioner's Office, which involves record keeping, statistical information/reports/database administration as required. SCBA maintenance and repairs. Fire Hose analysis of department needs and purchases. Daily car seat inspections, hazmat collection, public education, public appearances; Fundraising efforts for charity.	20%
3. **Leadership & People Management** – Assist Deputy Chief and Fire Services Manager with overseeing performance management, career development, and training.	20%

EDUCATION: *Provide **minimum** formal education required (degree, diploma, trade, etc.)*

Formal certification as a Fire Officer, ICS 300, specialized training, NFPA 1001 – Level 2. Must be a minimum of Primary Care Paramedic (PCP) and be ACP registered and in good standing. It is the responsibility of the employee to ensure compliance. Valid Class 3 and 4 driver's license (maximum of six demerits) with Q endorsement.

EXPERIENCE: *Provide **minimum** related years and type of experience required.*

5 years as a professional firefighter. Experience in scene coordination, command experience, and budgeting are assets.

OTHER SKILLS & COMPETENCIES: *Provide other skills and competencies required.*

Must be able to communicate clearly and precisely under stressful circumstances and be able to work under arduous physical conditions as part of an active firefighting and rescue team. Must meet vision standards (best eye 20/30 or better and weaker eye not less than 20/50) aided or unaided, and have no abnormalities in color vision; must pass a medical examination, physical capacity assessment and possibly aptitude testing. A security clearance with no criminal record is mandatory. Will participate in rotating shift work as assigned by the Fire Services Manager.

JOB TITLE:	**Fire Services Manager (Fire Chief)**
CLASSIFICATION	Management – Level 4
REPORTS TO:	Protective Services Director
BUSINESS UNIT:	Protective Services – Fire & Rescue Services
DATE COMPLETED:	August 2017

JOB SUMMARY: *Provide up to four sentences describing the jobs core purpose.*

The Fire Services Manager is the Town's subject matter expert on Fire, and is responsible for providing overall leadership for all aspects of the Fire and Rescue Services business centre, including short and long term planning, daily operations, and its physical, financial and human resources. Fire operations includes: provision of fire suppression, fire protection, rescue, fire safety inspections and enforcement, in-school awareness programs and environmental protection services including toxic roundup and response to toxic spills. In collaboration with Protective Services Director, Alberta Emergency Management Services and mutual aid partners the Manager provides input into Town's disaster planning.

KEY RESPONSIBILITIES: *Provide a brief description of up to five major responsibilities and approximate percent of time dedicated to each (up to 4 sentences). NOTE: When there are multiple incumbents in a role, percentage of time spent in each responsibility area may vary.*	Approximate Percent of Time
1. **Emergency Operations** – The Manager serves as the Coordinator of Disaster Services for the Town, assisting the Protective Services Director in coordinating the program, having contact with external agencies in the region, and overseeing Emergency Management planning and exercises. Attends emergency firefighting and rescue operations as required.	10
2. **Strategy/Planning/Analysis/Administration** – Ensure that various educational programs, services and promotion are provided to the public in fire prevention, fire safety and related environmental protection initiatives. Ensure fire inspections and investigations comply with the current Quality Management Plan. Evaluate the deployment and organization of emergency equipment and personnel on an ongoing basis to ensure maximum effectiveness and efficiency. Develop and monitor the implementation of policy, regulations and procedures related to Fire and Rescue Services. Ensure that education and training is provided to career and Community (Volunteer) Firefighters to enable them to manage all types of emergency and non-emergency situations. Prepare all necessary reports of all emergency and non-emergency responses for all external agencies concerned as well as various statistical reports on activities and present to appropriate internal and external stakeholders. Ensure that equipment is repaired, upgraded and purchased and that proper maintenance records of apparatus, tools and equipment are maintained. Develop, present and monitor operating and capital budgets, accommodating for quarterly & annual variances.	60
3. **Leadership & People Management** – The Manager is responsible for overseeing performance management, career development, employee recognition and pursuing disciplinary actions for Fire Services personnel. Ensure activities are conducted according to OH&S and Town standards.	20
4. **Other Responsibilities:** Serve as the senior Fire representative for the Town when dealing with government agencies, such as the Fire Commissioners Office, Safety Codes Council (Fire) and Alberta Municipal Affairs (QMP, Disaster Services), other organizations and the public. Participate in or lead cross-functional projects. Research Fire related topics and produce reports if required. Liaise and build relationships with external emergency services community. Attend Council meetings regarding Fire issues as needed.	10

EDUCATION: *Provide **minimum** formal education required (degree, diploma, trade, etc.)*

A degree in Fire Services Management is preferred, or a comparable combination of education and experience, such as Fire Officer certification, ICS 300, specialized training, and Emergency Medical Technician Ambulance (EMT-A). Must have extensive knowledge of fire inspections, the Alberta Fire Code, Building Code, and be a Safety Codes Officer with a minimum level of Inspector 2. Experience with fire investigations and hold at least an Investigator 1 certification. Must maintain security clearance at the level of "Verifiable Reliability".

EXPERIENCE: *Provide **minimum** related years and type of experience required.*

10 years in related leadership roles, including supervisory, and experience working with a unionized service.

OTHER SKILLS & COMPETENCIES: *Provide other skills and competencies required.*

Excellent public relations, presentation, supervisory, interpersonal oral and written skills are necessary. This is an enforcement position with all the related risks and involves shift work. Proficiency with Microsoft Office suite.

JOB TITLE:	**Fire Services Assistant**
CLASSIFICATION	Administration - Level 3
REPORTS TO:	Fire Services Manager
BUSINESS UNIT:	Protective Services – Fire Services
DATE COMPLETED:	August 2017

JOB SUMMARY: *Provide up to four sentences describing the jobs core purpose.*

The Assistant role provides a range of administrative duties that generally may include receiving telephone calls; receiving and directing guest, scheduling/administering meetings and events. Word processing, creating spreadsheets and presentations. Data entry, filing; managing electronic and hard-copy mail, maintaining confidentiality. This a role that may have multiple incumbents and duties may vary depending on the needs of the business area where each Assistant role is found.

KEY RESPONSIBILITIES: *Provide a brief description of up to five major responsibilities and approximate percent of time dedicated to each (up to 4 sentences). NOTE: When there are multiple incumbents in a role, percentage of time spent in each responsibility area may vary.*	Approximate Percent of Time
1. **Fire Administration** – Complete and distribute invoicing for various internal and external partnerships. Assist with & maintain incident reports, all inspections, compile data on community firefighters on a monthly basis. Assist with budget preparation & monitoring. Develop and maintain databases and records management that complies with Town RMS Policy.	**40**
2. **General Administrative Responsibilities** - Creating standardized Town documents such as letters or forms, creating basic original documents or modifying standard documents, modify formatting, responding to e-mails, attending and documenting meetings, etc. **Data Entry** – Entering data into new or pre-established spreadsheets, existing Town systems or software, tracking data such as performance metrics, assisting with budget preparation, tracking budgets and costs, etc. **Presentations** – Using PowerPoint or similar software develop presentations using source information or guidelines provided by requestor. **Calendar, Meetings, and Event Coordination** - Involves all aspects of coordinating the calendar of others, setting up meeting times, creating and circulating agenda and minutes, coordinating location, required technology and the details related to special events, managing distribution and contact lists, etc.	**40**
3. **Other Responsibilities** - Conduct routine research using the internet or other sources. Basic contract administration. Circulating information to all stakeholders. Best practices – proactively identify areas or processes for improvement or updating. Process invoices. Ensure all activities are conducted according to OH&S and Town standards.	**20**

EDUCATION: *Provide **minimum** formal education required (degree, diploma, trade, etc.)*

Related business administration certification is preferred

EXPERIENCE: *Provide minimum related years and type of experience required.*

3 years of directly related experience in an office environment.

OTHER SKILLS & COMPETENCIES: *Provide other skills and competencies required.*

Ability to communicate effectively, maintaining discretion and confidentiality, multi-task. Proficient in Microsoft Office suite.

JOB TITLE:	**Firefighter**
CLASSIFICATION	**Technical – Level 4**
REPORTS TO:	Fire Captain
BUSINESS UNIT:	Protective Services - Fire
DATE COMPLETED:	August 2017

JOB SUMMARY: *Provide up to four sentences describing the jobs core purpose.*

Firefighters are responsible for the provision of fire suppression, fire protection, rescue, fire safety inspections and enforcement, educational fire/safety awareness programs and environmental protection services including toxic roundup and response to toxic spills. In collaboration with the Captain provides input into Town's disaster planning.

KEY RESPONSIBILITIES: *Provide a brief description of up to five major responsibilities and approximate percent of time dedicated to each (up to 4 sentences). NOTE: When there are multiple incumbents in a role, percentage of time spent in each responsibility area may vary.*	Approximate Percent of Time
1. **Emergency Operations** – Firefighters are responsible for ensuring readiness to respond to emergencies and providing on-scene emergency services including: fire suppression, emergency scene management, rescue work, assisting with medical care and fire prevention.	6
2. **Non-Emergency Responsibilities** – Delivery of various public safety and community education programs and fire safety code inspections. Operation and maintenance of specialized firefighting apparatus, tools and equipment. Assist in the development of training schedules and programs for staff and Community FF. Supply inventory administration, fleet maintenance, policy development, disaster preparedness. Ensure Fire services building security systems are operating correctly. Co-ordinate and monitor maintenance schedules of all fleet vehicles, all personal protective equipment (PPE), Fleet SCAA, fleet firefighting structural duty gear. Participate in annual maintenance and lifecycle budget and reporting and assigned capital works projects. Provide mentoring and leadership to Fire Services staff and Community FF on a regular and on-going basis. Ensure that safety, sustainability, and environmental methods are utilized in fire services operations. Ensure adherence to all services. Design and provide public education (Fire Extinguishers, school tours, public events). Conduct inspection/investigations. Participate in the development and implementation of specialty teams, water rescue, ice rescue, rapid intervention, equipment purchases, hazmat; Hydrant inspection and testing. Prepare reports for Alberta Fire Commissioner's Office, which involves record keeping/statistical information/reports/database administration; SCBA maintenance and repairs. Fire Hose analysis of department needs and purchases. Daily car seat inspections, hazmat collection, public education, public appearances. Fundraising efforts for charity.	94

EDUCATION: *Provide **minimum** formal education required (degree, diploma, trade, etc.)*

Formal certification in NFPA 1001 – Level 2, ICS 200. Must be a minimum of Primary Care Paramedic (PCP) and be ACP registered and in good standing. It is the responsibility of the employee to ensure compliance. Valid Class 3 and 4 driver's license (maximum of six demerits) with Q endorsement.

EXPERIENCE: *Provide **minimum** related years and type of experience required.*

Previous related experience in the field in either a volunteer or professional capacity.

OTHER SKILLS & COMPETENCIES: *Provide other skills and competencies required.*

Must be able to communicate clearly and precisely under stressful circumstances and be able to work under arduous physical conditions as part of an active firefighting and rescue team. Must pass a medical examination, physical capacity assessment and possibly aptitude testing. A security clearance with no criminal record is mandatory. Will participate in rotating shift work as assigned by the Fire Services Manager.

Appendix F: Apparatus and Light Duty Vehicles

Station 1			
			
Unit Number:	**1008 (8 Romeo)**	Unit Number:	**1013 (E81)**
Year/Make:	**1988 Ford**	Year/Make:	**2012 Pierce**
Type:	Engine / Diesel	Type:	Engine / Diesel
Odometer (kms.):	N/A	Odometer (kms.):	130,400
Pump Capacity:	1,050 GPM	Pump Capacity:	1,750 GPM
Tank Capacity: (Water)	1,000 Liters	Tank Capacity: (Water)	4,000 Liters
Foam Capacity:	N/A	Foam Capacity:	76 Liters
Delivery Method:	N/A	Delivery Method:	N/A
Usage:	Training	Usage:	Front line engine
Comments:	Used for hose training and deployment training	Comments:	Engine fully equipped Fire/Rescue/Medical responses

Station 1			
			
Unit Number:	**1004 (E83)**	Unit Number:	**1010 (L81)**
Year/Make:	**2001 Superior**	Year/Make:	**2007 Rosenbaur**
Type:	Engine / Diesel	Type:	Ladder / Diesel
Odometer (kms.):	53,059	Odometer (kms.):	26,774
Pump Capacity:	1,750 GPM	Pump Capacity:	1,500 GPM
Tank Capacity: (Water)	4,000 Liters	Tank Capacity: (Water)	1,500 Liters
Foam Capacity:	76 Liters	Foam Capacity:	76 Liters
Delivery Method:	N/A	Delivery Method:	N/A
Usage:	Spare engine	Usage:	Quint / Front line engine
Comments:	Used as a 3rd front line truck Fire/Rescue/Medical response	Comments:	Used for Ladder/Engine/Medical response

Station 1			
No Image Available			
Unit Number:	**1014 (B81)**	Unit Number:	**8B**
Year/Make:	**2012 Ford**	Year/Make:	**2017 Ford**
Type:	F550 / Diesel	Type:	Truck
Odometer (kms.):	N/A	Odometer (kms.):	N/A
Pump Capacity:	20 GPM	Pump Capacity:	N/A
Tank Capacity: (Water)	750 Liters	Tank Capacity: (Water)	N/A
Foam Capacity:	N/A	Foam Capacity:	N/A
Delivery Method:	N/A	Delivery Method:	N/A
Usage:	Wildland	Usage:	Command / Utility
Comments:	Currently out of service waiting on engine replacement	Comments:	Chief's vehicle, also used to pull the jet boat

Station 1			
			
Unit Number:	**1012 (8C)**	Unit Number:	**1016 (8D)**
Year/Make:	**2023 GMC Yukon**	Year/Make:	**2013 Ford**
Type:	SUV Command Vehicle	Type:	Command Vehicle
Odometer (kms.):	N/A	Odometer (kms.):	N/A
Pump Capacity:	N/A	Pump Capacity:	N/A
Tank Capacity: (Water)	N/A	Tank Capacity: (Water)	N/A
Foam Capacity:	N/A	Foam Capacity:	N/A
Delivery Method:	N/A	Delivery Method:	N/A
Usage:	Command	Usage:	Command
Comments:	Chiefs Vehicle, also used to pull the jet boat	Comments:	Chiefs Vehicle, also used to pull the jet boat

Station 1			
No Image Available		No Image Available	
Unit Number:	**2017 (JB8)**	Unit Number:	**2018**
Year/Make:	**2015 Ford**	Year/Make:	**2015**
Type:	Pick-up truck	Type:	Command trailer
Odometer (kms.):	N/A	Odometer (kms.):	N/A
Pump Capacity:	N/A	Pump Capacity:	N/A
Tank Capacity: (Water)	N/A	Tank Capacity: (Water)	N/A
Foam Capacity:	N/A	Foam Capacity:	N/A
Delivery Method:	N/A	Delivery Method:	N/A
Usage:	N/A	Usage:	N/A
Comments:	N/A	Comments:	N/A

Station 1			
No Image Available			
Unit Number:			
Year/Make:	2015		
Type:	Outlaw Jet Boat		
Odometer (kms.):	N/A		
Pump Capacity:	N/A		
Tank Capacity: (Water)	N/A		
Foam Capacity:	N/A		
Delivery Method:	N/A		
Usage:	Water rescue		
Comments:	Jet boat		

Station 2			
			
Unit Number:	**1003 (B82)**	Unit Number:	**1021 (E82)**
Year/Make:	**2004 Ford**	Year/Make:	**2021 Pierce**
Type:	F550 / Gas	Type:	Engine / Diesel
Odometer (kms.):	39,292	Odometer (kms.):	17,493
Pump Capacity:	20 GPM	Pump Capacity:	1,750 GPM
Tank Capacity: (Water)	750 Liters	Tank Capacity: (Water)	4,000 Liters
Foam Capacity:	N/A	Foam Capacity:	76 Liters
Delivery Method:	N/A	Delivery Method:	N/A
Usage:	Wildland	Usage:	Front line engine
Comments:		Comments:	Fire/Rescue/Medical response

Station 2			
			
Unit Number:	**1020 (8W)**	Unit Number:	**1015 (T82)**
Year/Make:	**2018**	Year/Make:	**2013 Kenworth**
Type:	ATV	Type:	T370 / Diesel
Odometer (kms.):	565	Odometer (kms.):	24,981
Pump Capacity:	15 Gal	Pump Capacity:	1,050 GPM
Tank Capacity: (Water)	150 Liters	Tank Capacity: (Water)	8,000 Liters
Foam Capacity:	N/A	Foam Capacity:	76 Liters
Delivery Method:	N/A	Delivery Method:	N/A
Usage:	Wildland	Usage:	Tender
Comments:	Urban pathways and hard to reach areas in Okotoks	Comments:	Used for rural/town applications