City of Fort Saskatchewan
FIRE SERVICES MASTER PLAN

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PREFACE

This document serves as the City of Fort Saskatchewan's fire services master plan. The primary motivation for developing this document is for the city and the Fort Saskatchewan Fire Department in establishing a long-term strategy based on community risk, safety, corporate priorities, and municipal council-approved budget allocations. This document will be used as a tool to evaluate and forecast immediate and future emergency service needs of the community.

ACKNOWLEDGEMENTS

Behr would like to specifically acknowledge the leadership, diligence and continuous improvement focus of Director of Emergency Services and Fire Chief, Todd Martens. While there are some challenges for the Fort Saskatchewan Fire Department, Chief Martens remains positive in his efforts to enhance the department and public safety for the community and its citizens. The fire services' leadership and firefighters are dedicated and engaged in all facets of their community. Their pride in the department and their service is clear.

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ACRONYMS

AOHS	Alberta Occupational Health and Safety
CPR	Cardiopulmonary Resuscitation
DC	Deputy Chief
DEM	Director of Emergency Management
EMS	Emergency Medical Services
ERF	Effective Response Force
FF	Firefighter
FTE	Full-time Equivalent
FSFD	Fort Saskatchewan Fire Department
GIS	Geographic Information System
GoA	Government of Alberta
HIRF	High Intensity Residential Fires
IAFF	International Association of Fire Fighters
KSA	Knowledge, Skills and Abilities
LMS	Learning Management System
MCI	Mass Casualty Incident
MFR	Medical First Response
MVA	Motor Vehicle Accident
MVC	Motor Vehicle Collision
NFPA	National Fire Protection Association
POC	Paid-On-Call
PPE	Personal Protective Equipment
PSAP	Public Safety Answering Point
QMP	Quality Management Plan
SCBA	Self Contained Breathing Apparatus
SOG	Standard Operating Guidelines
SOP	Standard Operating Procedures
WCB	Workers' Compensation Board
WUI	Wildland Urban Interface

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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 is service delivery is often described as doing more for less.

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

The goal of developing this fire services master plan (FSMP) is to conduct a comprehensive review of the City of Fort Saskatchewan's (FSFD) 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 FSMP will also assist in conveying information to the public, staff, and municipal council about what to expect in the municipality's approach to fire and emergency service planning, service delivery model, and policy development.

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 FSMP also considers applicable legislation, industry-leading practices, and standards, along with current and anticipated risks to provide unbiased analysis and evidence-based recommendations.

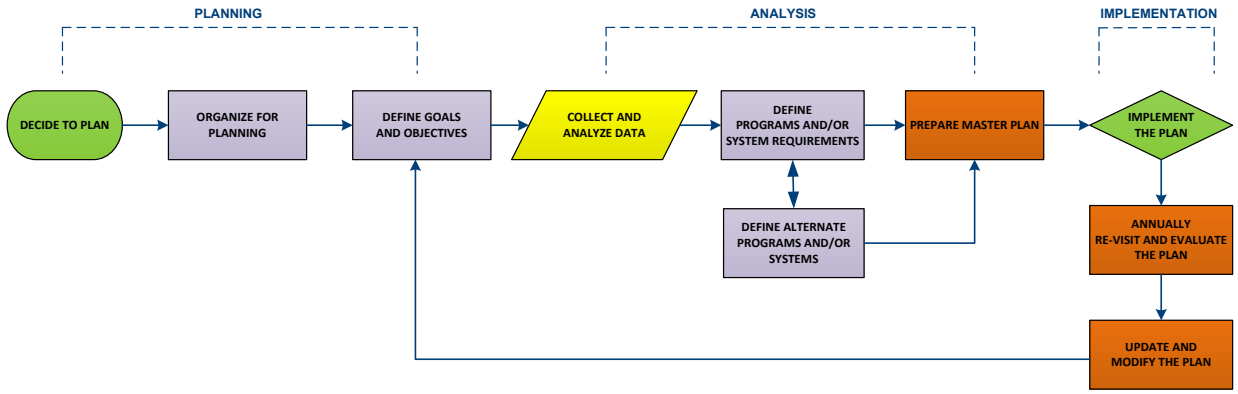
Ultimately, this FSMP will determine optimum service delivery model and serve as a 'blueprint' for the city to be more effective and efficient in the delivery of emergency services through current and future challenges.

Fire Services Master Plan Process

The following diagram illustrates the process used to complete this FSMP. The FSMP is sometimes referred to as a 'road map' to the future and used as a guiding document for current and future 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 reasonably practicable, we also recommend a third-party update of the FSMP at the five-year mark to apply an unbiased review into the operation and provide further credibility to the master plan process.

Figure 1: Fire Services Master Plan Process



Consultation and Comparative Analysis

Three key aspects in the development of the FSMP 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 station provided an opportunity to conduct a general condition and operational functionality assessment. This tour also provided the opportunity to meet with various FSFD staff and discuss their respective interests regarding the FSMP development.

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.

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[1] of FSFD 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. The communities who participated in the comparative analysis included:

- City of Lloydminster
- Town of Okotoks
- Town of Stony Plain
- City of Leduc
- City of Airdrie
- Town of High River
- City of Chestermere
- Town of Cochrane

All nine surveyed fire services have operating budgets within the range of $1.3M to $15.2M annually. FSFD consumes the seventh lowest percentage of the municipal budget of all the fire services surveyed at 4.9%. The percentage of the municipal budget for all fire services range from 3.8% to 10.85%. FSFD is below the median and the mean of the sample with regards to operating budget and the cost per capita of these departments. Based upon our experience, it is our opinion that the FSFD operating budget and cost per-capita is within the lower range of similarly staff fire services.

Community and Risk Overview

The City of Fort Saskatchewan is situated on the south bank of the North Saskatchewan River, bordered by Strathcona County to the south and east, northeast Edmonton on the most western edge, and Sturgeon County, across the river along the northwestern portion of the city. It is located approximately 20 km north-east of Edmonton at the junction of Highways 15 and 21, and approximately 25km from Sherwood Park.

The 2021 Canada Census[2] determined Fort Saskatchewan's population to be 27,088, which was a 12.1% increase since the 2016 Census. With a continued projected annual population growth rate of over 2.7%, Fort Saskatchewan's population is estimated to more than double by 2050 as part of the expected regional economic growth.

[1] *Please see Section 3.17, Municipal Comparative Analysis, Page 76*

[2] *https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?Lang=E&SearchText=Fort%20Saskatchewan&DGUIDlist=2021A00054811056&GENDERlist=1,2,3&STATISTIClist=1&HEADERlist=0*

With a land area of approximately 57.8 km^2, Fort Saskatchewan has a current population density of 485.8/km^2 including recently annexed lands are included. At the time of this census there was 10,420 dwelling units within the community.

The city is bisected east/northeast to west/southwest by a combination of Highway 21 and Highway 15. Highway 15 also bisects the north portion of the city running southeast/northwest across the North Saskatchewan River into Sturgeon County. These roadways, and multiple rail lines of CN Rail and CP Rail within the area, form a major portion of the surface transportation network that serves Alberta's Industrial Heartland and the City of Fort Saskatchewan. A significant percentage of Fort Saskatchewan residents commute within the area including Edmonton for employment, entertainment, and post-secondary education.

Every municipality has unique challenges and characteristics contributing to the overall risk profile of the community. Examples of challenges that may impact community risks include:

- Fire/rescue service model and response capacity
- Population and demographics
- Population growth rate
- Industry types
- Economy
- Rate of development
- Transportation corridor types
- Typography
- Weather
- Historical response data

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.

During our consultation process and analysis regarding the response data, the following risk factors where identified:

- Community growth and anticipated additions and changes to building stock in FSFD response zones
- Multiple road transportation corridors
- Major rail transport system on the peripheral of the city
- Dangerous goods release
- Grassland/crop/brush interface fires mixed with wind and high temperatures
- Limitations of the composite fire suppression staffing model
- Reliability of firefighting water supply

Further to the above, challenges for FSFD is the broad mix of occupancies within the city. Within Fort Saskatchewan, there are numerous locations presenting multiple, sometimes unknown, risks including:

- Industrial
- Manufacturing
- Petrochemical
- Oil and Gas
- Country residential
- Commercial
- Medium to heavy industrial (which may include on-site research and additional unknown hazards)
- Transportation (trucking and rail spurs) for minerals, petrochemical products, flammable liquids, and gases

Department Overview

FSFD is a composite fire service. Composite fire service is defined as utilizing a combination of career and paid-on-call firefighters. FSFD relies upon a group of career full-time firefighters, supported by casual and paid-on-call (POC) firefighters responding out of a single fire station located at 10099 93 Avenue. FSFD has recently transitioned to the composite model because of increased call volume, complexity, and resource demand within their service area.

The FSFD is currently funded to employ the following positions:

- 1 fire chief director of emergency management
- 1 deputy chief, operations, training, and emergency management
- 4 assistant chiefs
- 4 full-time captains
- 6 full-time firefighters (increased to 8 in 2023)
- 28 paid-on-call firefighters
- 1 administrative assistant

Note: *FSFD staffing levels of paid-on-call firefighters vary given the recruitment and retention challenges.*

The minimum on duty strength of 4 staff that provide 24/7 emergency response coverage includes:

- Assistant fire chief (1)
- Captain (1)
- Firefighter engineer (1)
- POC firefighter (1)

Current community growth projections, risk factors and increasing management demands associated with maintaining a fire service will require additional operational and administrative staff capacity.

It must be noted that in our analysis, FSFD full time staffing is within the bottom third of the comparative communities surveyed. This combined with limitations of the current POC model, response system capabilities and challenges to assembly of an effective response force emphasize the need for an enhanced emergency response capability.

Summary of Observations and Recommendations

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

A timeframe 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 or members' time and will therefore not pose significant additional costs to the community. Other recommendations regarding staffing, equipment and infrastructure will have associated costs. Costs are rough order of magnitude estimates only and will require further investigation. Cost 'neutral' refers to the use of internal staff through a normal work schedule. Undertaking of these cost neutral recommendations are also contingent upon staff availability.

Observation # 1: The communication and collaboration has increased between the planning and development department and FSFD, however, there is no formal or documented review process.

Reference: Section 2.2, Community Planning & Development, p.11

Recommendation #1: The fire chief and city administration create formal policy that includes FSFD in the sub-division, land use and development planning processes.

(Suggested completion: 12 - 24 months)

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

Observation #2: The planning & development department and FSFD maintain separate inventories of structures and facilities including general risks. Given the projected growth a corporate level integrated data system would enhance the tracking and usefulness of structural inventories in Fort Saskatchewan. This centralized system would have building and hazard pre-planning information, integrated building and fire inspection information, and site-specific hazard and risk related information.

Reference: Section 2.4, Structural Fire Risk Analysis, p.18

Recommendation #2: The City's IT department to evaluate the feasibility of a centralized system to maintain building, facilities, and structure inventories data.

(Suggested completion: 48 - 60 months and ongoing)

Rationale: *Current and accurate information on all buildings and structures allows FSFD, and other municipal departments, to assess the impact of future growth including potential increases more readily to programs and services. Building inventories should continue to be classified, documented, and maintained utilising both the National Building Code of Canada – Alberta 2019 Edition - Major Occupancy Classification system and the city's Hazard Identification and Risk Assessment (HIRA) processes.*

Observation #3: As is noted in Section 4, FSFD is challenged to provide an initial fire response within the performance measure (10-minute response time in 90% of all structural fire responses) prescribed in the National Building Code of Canada – Alberta 2019 Edition. This will be exacerbated as additional development occurs in areas outside the existing developed footprint. Further validation regarding this challenge is identified in the 2020 Fire Underwriters Report. This analysis indicated the following:

'the current fire hall covers 28% of properties under initial response benchmarks. Adding a secondary station would increase the coverage by approximately 50-60% depending on final placement'.

While efforts to reduce call handling time and other communication improvements may improve response times and increase performance, the distance travelled from a single location will always remain a significant limitation for fire response. The two most effective options to meet this requirement would appear to be:

1. Provide an additional station location with adequate staffing to achieve the "10 minutes in 90% of instances" structural fire response-time performance threshold as per the NBCC-AB19, or
2. Direct that one of the variances noted in the NBCC-AB19 (Articles 3.2.3.1. for large buildings, 9.10.14.3. for small buildings other than houses, or 9.10.15.3. for houses) be implemented in all construction outside the 10-minute zone within Fort Saskatchewan. Briefly those variances are:
    a. double the minimum spatial distances to the property line,
    b. sprinkler the buildings in accordance with NBCC-AB19 Division B Article 3.2.5.12, or
    c. require more stringent requirements for developments where the exposed building faces are constructed with reductions in the maximum area and spacing of unprotected openings (windows/doors), fire resistive construction, and non-combustible cladding.

Reference: Section 2.5.1, Fire Department Response Demand, p.21

Recommendation #3: The City establishes a regulation or bylaw for all new developments that enforces compliance with the NBCC-AB19's limiting distance and fire department response requirements.

(Suggested completion: 12-36 months)

Rationale: *The municipality must determine which option it will utilise to achieve compliance for new construction in undeveloped areas to meet the requirements of the NBCC-AB19 and the preferred approach, including all requirements, variances, or incentives, in an appropriate municipal statue.*

Observation #4: There are numerous intersecting roadways and rail crossings which increase the risk of collisions, including those involving hazardous materials. It is noted that the rail crossings are located within the various industrial sites in close proximity to the city. Regardless a major hazardous material release due to a collision near populated area is assessed as a low probability, high consequence event that could result in a high to extreme life safety risk.

Reference: Section 2.5.3, Dangerous Goods Response, p.23

Recommendation #4: FSFD should continue to, evaluate, and modify response protocols and pre-incident training scenarios for dangerous goods.

(Suggested completion: 36-72 months)

Rationale: *Continued engagement and improvement of partnerships with rail, trucking, pipeline, and other local industry representatives is required to enhance knowledge of the types of dangerous goods being used in and transported through the city. This information is invaluable to the FSFD to develop and modify response protocols and pre-incident training scenarios. Additionally, a periodic estimate and assessment of the volumes of dangerous goods transported through the response zones will inform future hazard identification and risk assessments (HIRA).*

Observation #5: There are opportunities to formally support the FireSmart program for grass/cropland situations, especially to residents and industry within the Heartland area that abuts Fort Saskatchewan. There are grants available through provincial programs to assist municipalities to complete plans and implement risk reduction strategies. Joint response to larger prolonged grass/crop wildfire incidents may be partially compensated through the Municipal Wildfire Assistance Program which compensates the municipality based on a funding formula for overall incident expenses.

Reference: Section 2.5.4, Wildland Urban Interface Fires, p.24

Recommendation #5: Work with Strathcona County to create a grass/crop wildfire prevention plan and encourage implementation of the FireSmart program.

(Suggested completion: 48-120 months)

Rationale: *The community grass/crop wildfire prevention plan, along with the implementation of FireSmart program principles will provide property owners information and an opportunity to prevent the spread of grass/crop wildfires within the county. Grant funding may be available from Alberta Agriculture & Irrigation and Alberta Forestry.*

Observation #6: There is a current backlog of uncompleted inspections due to the challenges of these non-emergency response activities being assigned to the platoons. The projected growth of businesses, structures, and facilities in the city, will further exacerbate this shortfall. Further the sustainability of the City's fire accreditation may be at risk.

Reference: Section 2.5.5, Limitations on the Provision of Fire Prevention and Public Safety Education, p.25

Recommendation #6: Establish two full-time FSFD fire safety codes officer positions or alternatively contract out safety code, fire discipline requirements.

(Suggested completion: 12-36 months)

Rationale: *Formally establishing a dedicated safety codes fire discipline function will support the requirements of the City's and Fire Discipline Quality Management Plans, as well as the fire safety public education programming. It will also help to ensure scheduled, risk based, and other required inspections and investigations are completed. The owner, occupant, and public safety education programs are required to ensure the objectives of the QMP are being met effectively for the benefit of residents.*

Observation #7: FSFD currently strives to provide fire inspections on a scheduled basis based solely upon the major occupancy classifications contained in the NBCC AB19. The schedules do not provide any further refinement based upon the relative risk posed by different sites, occupancies, activities, and products.

Reference: Section 2.5.5, Limitations on the Provision of Fire Prevention and Public Safety Education, p.25

Recommendation #7: Update fire and life safety inspection schedules within the Fire Discipline QMP(s) to initiate a risk-based inspection program and upon request or complaint.

(Suggested completion: 12 – 24 months)

***Rationale**: This type of program will provide methods to further quantify site risk and direct a priority-based schedule focusing inspection and compliance efforts on structures and facilities presenting a high level of life and/or fire safety risk.*

Observation #8: When compared to similar sized departments, the FSFD administrative leadership team size shown in the organizational chart is consistent with industry leading practices *(See section 3.17 Municipal Comparators).* However, the portfolios assigned to the fire chief and deputy that includes operations, training, fire inspections/investigations administration, and emergency management results in a workload shortfall. A full-time dedicated DEM is recommended in Section 3.9.

Reference: Section 3.2.3, FSFD Administrative Positions, p.33

Recommendation #8: Establish a second deputy chief position to support training and fire prevention functions.

(Suggested completion: 36-48 months)

***Rationale:** Each administrative position is assigned specific portfolios for the safe and effective management and leadership of the department. The recommended organization response matrix would allow for roles and responsibilities to be evenly distributed through the administration team and create capacity to undertake and complete fire service management and strategic level requirements including those recommended in this FSMP.*

Observation #9: FSFD conducts live fire training twice a year. Their commitment to staff to receive the appropriate live fire training is completed by renting the Spruce Grove Fire Department training tower which is over an hour drive from Fort Saskatchewan. Additionally, the reliance on outside agencies to provide the necessary live fire training has resulted in challenges to complete the required training. Furthermore, this approach requires the deployment of up to 12 firefighters and two engines out of the city's response area and depletes the FSFD response capabilities.

Reference: Section 3.4, Training, p.38

Recommendation #9: Conduct a feasibility analysis of building firefighter training facility.

(Suggested completion: 48-60 months)

Rationale: *A modern training facility including a local live fire training structure would provide reliable training opportunities that can be scheduled based exclusively on the needs of the FSFD. The ability to provide identified training needs within Fort Saskatchewan will provide cost efficiencies and increase the ability to provide on-shift training with minimal effect to response capabilities.*

Observation #10: The specialized technical services below are listed in the Council policy SFA-015-C however, the FSFD are not currently equipped or trained to maintain these services:

- Technical Rope rescue (services provided to the NFPA 1006 Standard)
- Trench rescue (services provided to the NFPA 1006 Standard)
- Confined space rescue (services provided to the NFPA 1006 Standard)
- Building collapse (services provided to the NFPA 1006 Standard)

Reference: Section 3.8.6, Technical Rescue Services, p.48

Recommendation #10: Update Council Policy SFA-015-C Fire Department Service levels to indicate the current services provided that FSFD are capable to provide (training, resources, and skill maintenance).

(Suggested completion: 1 - 6 months)

Rationale: *The policy must indicate the actual services to ensure FSFD staff and the citizens are aware of the services provided by the FSFD.*

Observation #11: The Government of Alberta (GoA) requires municipalities to regulate the development, construction, and fire protection requirements through the application of National Building and Fire Code of Canada, Alberta Editions. An inspection of all higher risk structures should be conducted and evaluated in terms of safety codes compliance, risk assessment, and public safety. As discussed, it is useful to develop and maintain a property risk profile to identify high-priority risks and develop risk management strategies. The City of Fort Saskatchewan QMP has FSFD providing fire inspections based on request or complaint.

Reference: Section 3.8.7.1, Fire Code Inspection Services, p.50

Recommendation #11: Modify the City of Fort Saskatchewan Quality Management Plan to include a cyclical inspection program with the establishment of a fire prevention inspector.

(Suggested completion: 12 - 24 months)

Rationale*: A mandatory inspection program increases public safety for high life risk assembly occupancies and high-risk properties such as industrial occupancies. In addition, a cyclical inspection program provides the mechanism to assess the impact of future growth and the changing risk profile of the community. This will aid in the long-term planning of response resources (personnel and equipment) and the developing of FSFD standard operating guidelines.*

Observation #12: FSFD firefighters have conducted some pre-planning, typically 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. FSFD has access to the city's building inventory and can serve as the basis for a formal pre-emergency-plan process.

Reference: Section 3.8.8, Pre-Emergency Planning, p.51

Recommendation #12: Establish a formalized pre-emergency plan inventory program.

(Suggested completion: 36-48 months)

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

Observation #13: The 9-1-1 Call Answer and Dispatch Services agreement dated 9 September 2016 is dated and does not include alarm processing or handling performance measures.

Reference: Section 3.8.10, 911 and Fire Dispatch, p.52

Recommendation #13: Complete an update of the 911 Call Answer and Dispatch Services agreement and include alarm answering, and processing performance measures as part of the revised agreement.

(Suggested completion: 12-24 months)

Rationale: *Performance benchmarks for PSAP are established in NFPA 1221 and 1710. Achieving the benchmark performers has a direct impact on fire department response capacity including emergency notification, turnout time and effective total response time. Municipal agreements should be updated on a recurring basis, and it is suggested every 5 years for this type of service agreement.*

Observation #14: During the interview consultation process it was identified that additional resources are required to enhance the City's emergency management. The management of this obligation requires a considerable amount of the Fire Chief's time. This includes coordination with industry members within Fort Saskatchewan and ERP reviews.

Reference: Section 3.9 Emergency Management Program and Emergency Coordination Centre, p.53

Recommendation #14: Establish a full-time dedicated Emergency Management position.

(Suggested completion: 12-24 months)

Rationale: *To efficiently and effectively manage the city's emergency management program a full-time DEM is required. The significant EM risk factors including the industrial component substantiates the need for this position. Further, this position would reduce the EM workload from the fire chief. The city DEM would become the single point of contact with respect to emergency management for both external partners and city-*

wide departments, industry ERP reviews, update emergency plans, contact lists, and be on-call in the event of an emergency incident response.

Observation #15: There are several emergency management-related plans that need to be developed, updated, or enhanced. For example, this could include a formalized proper emergency social services plan, evacuation plan, and emergency donation management program.

Reference: Section 3.9 Emergency Management Program and Emergency Coordination Centre, p.53

Recommendation #15: Establish an external contract to have the various emergency management-related plans to be developed, updated, or enhanced.

(Suggested completion: 12-24 months)

Rationale: *These emergency management-related plans require a considerable amount of work to complete. A full time DEM would be pre-disposed for 2-3 years to complete this requirement. An external contractor would provide the focused resources to complete these plans. Following this external contractor review, the full-time DEM would be responsible for the ongoing review and updating on an annual basis.*

Observation #16: Both newer squad pumpers have an ongoing issue with the foam delivery system. As the application of foam mixed with water through the fire hose is an effective fire suppression tactic, this issue needs to be corrected.

Reference: Section 3.12.1.1, Apparatus and Light Duty Vehicle Assessment, p.62

Recommendation #16: Determine with the manufacturer the deficiency with the foam systems and undertake corrective action.

(Suggested completion: 3-6 months)

Rationale: *The built-in foam delivery systems for each of these apparatuses are integral components of fire suppression tactics and must be made fully operational.*

Observation #17: There are areas within the FSFD response zone that are not connected to the water main system. FSFD is not equipped with a water tanker as part of the response fleet.

Reference: Section 3.12.1.1, Apparatus and Light Duty Vehicle Assessment, p.62

Recommendation #17: Develop a water servicing plan for areas without available fire hydrants.

(Suggested completion: 12-24 months)

Rationale: *The Fire Underwriter's Survey provides 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.*

Observation #18: FSFD relies on a 3rd party vendor to conduct the necessary pump tests, maintenance, and certifications on all pump capable apparatus and aerial devices.

Reference: Section 3.12.1.4, Fire Apparatus Maintenance and Repair, p.67

Recommendation #18: Evaluate the feasibility of certifying one or more of the City's mechanics to the EVT level to repair and maintain FSFD's apparatus fleet.

(Suggested completion: 36-48 months)

Rationale: *Specialized levels of training and certification are necessary to test, repair and certify certain components of fire apparatus on a yearly basis. For FSFD, this requires bringing in specialized mechanics to perform these tasks and requires advanced planning, or subject to delays in necessary repairs for unforeseeable repairs. Having city fleet services train one or more of their staff to achieve this designation will improve efficiency and potential cost savings.*

Observation #19: Although FSFD has an established fire apparatus and vehicle replacement plan, FSFD lifecycles for their first line heavy apparatus is not consistent with lifecycles recommended by NFPA 1901 and the FUS body reporting to the Canadian General Insurance (CGI). As detailed in Table 7, first line apparatus is to be utilized for up to 15 years and then serve as a backup, or in reserve capacity for up to five additional years. The current deployment protocol identifies Squad 10, Squad 11, and Tower 10 as first line apparatus that should adjust their first line life cycles to 15 years.

Reference: Section 3.12.1.5, Fire Apparatus Replacement and Dispersal, p.68

Recommendation #19: Amend the existing life cycles for first line heavy apparatus to 15 years of first line and five years in reserve including adequate contributions to capital reserves.

(Suggested completion: 24-60 months)

Rationale: *Adjusting the first line heavy apparatus replacement timelines to 15 years followed by 5 years in reserve will bring the FSFD vehicle fleet in compliance with NFPA and ULC requirements. Further to the NFPA and ULC requirements, it is advantageous to annually review and update the expected life cycles for all apparatus and vehicle including replacement funding estimates to ensure that there is the necessary complement of safe and dependable apparatus and other emergency vehicles.*

Observation #20: FSFD SCBA inventory appears to be sufficient for normal operations. Funds have been allocated in the FSFD capital replacement fund for SCBA and air bottle replacement in 2025.

Reference: Section 3.14.1, Self-Contained Breathing Apparatus, p.73

Recommendation #20: Maintain sufficient SCBA and air bottles to accommodate all FSFD firefighters.

(Suggested completion: 24-36 months)

Rationale: *Establishing and maintaining a sufficient inventory of SCBA and air bottles to allow every FSFD firefighter the opportunity to utilize this critical component of firefighter safety when required.*

Observation #21: SCES alarm handling performance for emergency incidents exceeded the NFPA 1225 alarm handling standard of 75 seconds by a considerable margin. The 90th percentile compliance for the study period was 50% but trending downward throughout the study period. Further, as noted in Section 3, performance metrics are not identified in the City's contract with SCES.

Reference: Section 4.4.1, Alarm Handling Performance, p.97

Recommendation #21: Identify alarm handling process improvement opportunities and benchmarks.

(Suggested completion: 1-12 months)

Rationale: *Alarm handling 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 handling can contribute to increasing response time and intervention timelines. When these processes are extended, a root cause analysis should be undertaken with the aim of identifying process improvement opportunities. There are numerous potential causes of extended alarm handling including complex incidents, difficulty in identifying a location and transfer of calls between agencies. Alarm handling times for medical incidents were particularly extended. As a result, FSFD administration should work with SCES and possibly Alberta Health Services with the aim of identifying opportunities to improve that process. Further, alarm handling times should be monitored and reported regularly.*

Observation #22: FSFD has done well to improve chute times, which improved over the study period. However, chute time increased for fire-related incidents and overall compliance was over the FSFD 90 second chute time goal by a considerable margin. The 2022 90th percentile chute time for fire-related incidents was 171 seconds, nearly twice the goal. FSFD chute times are monitored and reported to staff.

Reference: Section 4.4.2, Chute Time Performance, p.98

Recommendation #22: Investigate opportunities to improve chute time for fire-related incidents and continue to monitor and report chute time performance.

(Suggested completion: 12-24 months)

Rationale: *Chute times for fire-related incidents can be expected to be longer than others as firefighters require additional time to change into their personal protective equipment. However, chute times for fire-related incidents are trending upward. Changes to the notification processes such as implementing pre-alerts may improve chute time. Any improvement in chute time will improve total initial response time.*

Observation #23: Fort Saskatchewan City Council is to be commended in establishing specific fire department service levels in their policy. Fire Department Service Levels identifies three-time specific response goals:

1. A fire engine and three firefighters will arrive at emergencies within 10 minutes, 90% of the time.
2. A supervisor will arrive in a command vehicle in 10 minutes, 90% of the time.
3. Meet full deployment of resources required for structure fires within six minutes of the initial arriving apparatus, 90% of the time.

While compliance for the first two standards is relatively high, they are not fully achieved. Further, the third service level regarding full deployment time is not achievable with the current resources available, nor is it measured and reported on.

Reference: Section 4.4.6, Supervisor Response Performance, p.106

Recommendation #23: Review Service Level Policy for Emergency Response in Fort Saskatchewan.

(Suggested Completion: 12-36 months)

***Rationale**: 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 is considered a best practice.*

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."

Further, service levels should be achievable, measurable, and reported on.

Observation #24: Highway 15 provides the primary north to south response corridor for FSFD. Within 10 minutes, FSFD can respond northward to approximately 119 St., and southward to Wilshire Boulevard along Highway 15 from its current fire station. As illustrated by Map 2, the southwest corner of development and the newly annexed lands cannot typically be reached when responding from the station within 10 minutes, 90% of the time.

Reference: Section 4.5, Response Time Mapping Analysis, p.107

Recommendation #24: Review development options in the areas outside of a 10-minute fire department response.

Suggested Completion: 1-24 months)

Rationale: *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 are met which exempt 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 the 0.5 factor is not required. If a bylaw establishing sprinklers is implemented, the accompanying changes to the on-street and lot water supply will be required.*

Observation #25: FSFD is unable to achieve the city policy regarding assembling a full effective response force of 15 firefighters and apparatuses within six minutes of the first arriving apparatus, 90% of the time. Further, it routinely takes up to 30 minutes to add three or more firefighters to the initial responding four firefighters. While 14 of the 42 structure fires were managed with just four firefighters, 34 structure fires required more than four firefighters to manage. Delays in completing critical tasks and increased intervention times would have occurred for these incidents as the third arriving apparatus may have taken up to 30 minutes to respond. Delays or not being able to complete critical tasks may result in increased risk to firefighters, the public, and delayed interventions.

Reference: Section 4.6, Effective Response Force, p.112

Recommendation #25: Increase minimum on-duty firefighter staffing until a minimum staffing of six firefighters can be achieved (see three options listed below).

(Suggested completion: 2-5 years)

Options	Details	Advantages	Disadvantages
1. Full staffing in 2024 <u>Preferred Option</u>	• Add 14 positions in 2024 (8 fulltime and 6 paid-on-call) • Total operational staff 24 fulltime and 8 paid-on-call. • 6 fulltime and 2 paid-on-call per platoon. • 3 fulltime and 1 paid-on-call on a truck, 2 trucks in station	• Enhanced response capability and ERF achieved in 2024. • Reduced administrative effort to maintain minimum duty strength of 6	• $1,390,000 budget increase in 2024
2. Incremental staffing - 4 years	• 2 fulltime and 2 paid-on-call - 2024. • 2 fulltime and 2 paid-on-call -2025 • 2 fulltime and 2 paid-on-call -2026 • 2 fulltime and 2 paid-on-call -2027 • Total operational staff 24 full time and 8 paid-on-call in 2027	• Fully implemented enhanced response capability and ERF in 2027. • Reduced administrative effort to maintain minimum duty strength of 6 by 2027. • Incremental budget increase per year of approximately $347,500 over 4 years	• Only minor enhancement to response capacity until full implementation in 2027 • Total $1,390,000 budget increase by 2027
3. Incremental staffing - 3 years: 4 paid-on-call and 4 AFC	• 4 fulltime and 2 paid-on-call in 2024. • 4 fulltime 2025 • 4 fulltime 2026 • Total operational staff 28 full time and 4 paid-on-call in 2026 • 6 fulltime and 1 paid-on-call per platoon, AFC are incident command	• Fully implemented enhanced response capability and ERF in 2026 • Reduced administrative effort to maintain minimum duty strength of 6 by 2026. • Incremental budget increase per year of approximately $750,000 over 2 years	• Only minor enhancement to response capacity until full implementation in 2026 • Total $1,630,000 budget increase by 2026

Rationale: *As the city grows the number of emergency incidents will increase. An increase in larger, more complex incidents and concurrent incidents will drive the need to increase response capacity or accept a reduced level of service. However, even with lowered service level goals large incidents will occur.*

Observation #26: FSFD standard operating guidelines could be enhanced by identifying the number of firefighters and resources required to complete critical tasks. A critical task analyses embedded in response policies or guidelines will clarify incident resource requirements and the tactical priorities based on resource availability.

Reference: Section 4.7, Critical Task Analysis, p.117

Recommendation #26: Complete a critical task analysis for common emergency incident types.

(Suggested completion: 6-12 months)

Rationale: *The Alberta Occupational Health and Safety guide for firefighting identifies that response policies should include a critical task analysis. It states that "guidelines and policies developed should include, as per National Fire Protection Agency (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.*

Observation #27 The FSFD has recently implemented a new records management system – Fire Pro 2. This software package supports the development of custom reports. The FSFD fire chief does not regularly provide Fort Saskatchewan City Council with performance reports.

Reference: Section 4.8, Measuring, Managing and Reporting Performance, p.120

Recommendation #27: Develop relevant performance metrics and provide a performance report for Fort Saskatchewan City Council

(Suggested completion: 12-24 months)

Rationale: *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 the compliance with council approved service levels. It is difficult for a city council to evaluate their service levels without this information.*

Table of Recommendations Overview

The following table shows the recommendations, along with cost implications and timeline for implementation. A timeframe within 1 – 120 months (1 – 10 years). A colour code is applied to each recommendation according to prioritization and completion.

Critical	Short Term	Intermediate	Long Term
1 -12 months	12 - 48 months	48 - 60 months	60-120 months

	Recommendation	'23	'24	'25	'26	'27	'28	'29	'30	'31	'32	Source	Est. Cost	Comments
1	The fire chief and city administration create formal policy that includes FSFD in the sub-division, land use and development planning processes.											Staff Time	Cost neutral	
2	The City's IT department to evaluate the feasibility of a centralized system to maintain building, facilities, and structure inventories data.											Staff Time	Cost neutral	Results of feasibility analysis may lead to procurement of a digital system. Cost TBD
3	The City establishes a regulation for all new developments that enforces compliance with the NBCC-AB19's limiting distance and fire department response requirements.											Staff Time	Cost neutral	Policy will have an impact of future developments within the city
4	FSFD should continue to, evaluate, and modify response protocols and pre-incident training scenarios for dangerous goods.											Staff Time	Cost neutral	
5	Work with Strathcona County to create a grass/crop wildfire prevention plan and encourage implementation of the FireSmart program.											Staff Time	Cost neutral	Implementation of FireSmart may have cost implications. Costs will be based upon extend of program and agreement with Strathcona County

	Recommendation	'23	'24	'25	'26	'27	'28	'29	'30	'31	'32	Source	Est. Cost	Comments
6	Establish of two full-time FSFD fire safety codes officer positions or alternatively contract out safety code, fire discipline requirements.											Operational budget	Estimated $220,000.00 per year	Full time option is based upon $110, 000,00 per- year for 1 SCO including corporate costs. Contract option is dependent upon scope and 3rd party agreement
7	Update fire and life safety inspection schedules within the Fire Discipline QMP(s) to initiate a risk-based inspection program and upon request or complaint.											Staff Time	Cost neutral	Implementation is dependent upon staff capacity of new SCOs or 3rd party contractor agreement
8	Establish a second deputy chief position to support training and fire prevention functions.											Operational budget	Estimated $140,000.00 per year	Contingent upon revised service delivery policy. Based upon $140, 000.00 per- year including corporate costs.
9	Conduct a feasibility analysis of building firefighter training facility.											Staff Time	Cost neutral	Outcome may result in capital cost to establish a training facility. Cost TBD.

	Recommendation	'23	'24	'25	'26	'27	'28	'29	'30	'31	'32	Source	Est. Cost	Comments
10	Update Council Policy SFA-015-C Fire Department Service levels to indicate the current services provided that FSFD are capable to provide (training, resources, and skill maintenance).											Staff Time	Cost neutral	Costs are contingent upon services and performance levels approved by City Council
11	Modify the City of Fort Saskatchewan Quality Management Plan to include a cyclical inspection program with the establishment of a fire prevention inspector.											Staff Time	Cost neutral	Contingent upon addition of SCO or contract agreement
12	Establish a formalized pre-emergency plan inventory program.											Staff Time	Cost neutral	
13	Complete an update of the 911 Call Answer and Dispatch Services agreement and include alarm answering, and processing performance measures as part of the revised agreement.											Staff Time	Cost neutral	Revised contract may include cost escalation based upon additional requirements
14	Establish a full-time dedicated DEM position.											Operational budget	Estimated $140,000.00 per year	To manage the city's emergency management program a full-time DEM is required
15	Establish an external contract to have the various emergency management-related plans to be developed, updated, or enhanced.											Operational budget	Estimated range: $30-50K one time cost	Costs are dependent upon scope of 3rd party contract scope

	Recommendation	'23	'24	'25	'26	'27	'28	'29	'30	'31	'32	Source	Est. Cost	Comments
16	Determine with the manufacturer the deficiency with the foam systems and undertake corrective action.											Staff Time	Cost neutral	Corrective action may result in repair or replacement costs. TBD.
17	Develop a water servicing plan for areas without available fire hydrants.											Staff Time	Cost neutral	
18	Evaluate the feasibility of certifying one or more of the City's mechanics to the EVT level to repair and maintain FSFD's apparatus fleet.											Staff Time	Cost neutral	Decision to train a city mechanic to EVT will have training costs. Rough order magnitude $25,000.00 including staff time
19	Amend the existing life cycles for first line heavy apparatus to 15 years of first line and five years in reserve including adequate contributions to capital reserves.											Staff Time	Cost neutral	Increased contributions to capital reserves will be required to sustain the fleet.
20	Maintain sufficient SCBA and air bottles to accommodate all FSFD firefighters.											Capital budget	Estimated range $400,000.00 - $500,000.00	FSFD capital replacement fund for SCBA and air bottle identified for replacement in 2025.
21	Identify alarm handling process improvement opportunities and benchmarks.											Staff Time	Cost neutral	

	Recommendation	'23	'24	'25	'26	'27	'28	'29	'30	'31	'32	Source	Est. Cost	Comments
22	Investigate opportunities to improve chute time for fire-related incidents and continue to monitor and report chute time performance.											Staff Time	Cost neutral	
23	Review Service Level Policy for Emergency Response in Fort Saskatchewan											Staff Time	Cost neutral	
24	Review development options in the areas outside of a 10-minute fire department response											Staff Time	Cost neutral	
25	Increase minimum on-duty firefighter staffing until a minimum staffing of 6 firefighters can be achieved. Three options provided											Operational Budget	Estimated $1,390,000.00 to $1,630,000.00 per year	Contingent upon option selected as preferred approach. Staff increase of 8 or12 full time, and 6 or 4 paid-on-call
26	Complete a critical task analysis for common emergency incident types.											Staff Time	Cost neutral	
27	Develop relevant performance metrics and provide a performance report for Fort Saskatchewan City Council											Staff Time	Cost neutral	FSFD has recently implemented a new records management system that can support regular performance reports

Conclusion

This fire services master plan was completed to assist the City of Fort Saskatchewan and the Fort Saskatchewan Fire Department (FSFD) 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. This analysis included a review of the operational and administrative aspects of the FSFD, community profile and risks, staffing, core service and program delivery, training, recruitment and retention, facilities, and major equipment.

Further, FSFD 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 27recommendations is:

- The City establishes a regulation for all new developments that enforces compliance with the NBCC-AB19's limiting distance and fire department response requirements.
- Establish of two full-time FSFD fire safety codes officer positions or alternatively contract out safety code, fire discipline requirements.
- Update fire and life safety inspection schedules within the Fire Discipline QMP(s) to initiate a risk-based inspection program and upon request or complaint.
- Establish a second deputy chief position to support training and fire prevention functions.
- Update Council Policy SFA-015-C Fire Department Service levels to indicate the current services provided that FSFD are capable to provide (training, resources, and skill maintenance).
- Establish a full-time dedicated Director of Emergency Management position.
- Amend the existing life cycles for first line heavy apparatus to 15 years of first line and five years in reserve including adequate contributions to capital reserves.
- Review Service Level Policy for Emergency Response in Fort Saskatchewan
- Increase minimum on-duty firefighter staffing to a minimum staffing of 6 firefighters 24 hours a day, 7 days a week. Three options are provided in the fire service master plan.
- Develop relevant performance metrics and provide a performance report for Fort Saskatchewan City Council

Although each recommendation has a corresponding timeframe, it is important to note this FSMP needs to be revisited on a regular basis to confirm that the observations and recommendations remain relevant. The recommendations outlined in this FSMP will better position the FSFD to mitigate and manage community risks, monitor response capabilities and performance, and maintain excellent community relationships and value for money.

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 City of Fort Saskatchewan.

SECTION 1
INTRODUCTION

1.1 Background and Significance

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 is 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 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 developing this FSMP is to conduct a comprehensive review of the City of Fort Saskatchewan's (FSFD) 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 FSMP will also assist in conveying information to the public, staff, and municipal council about what to expect in the municipality's approach to fire and emergency service planning, service delivery model, and policy development.

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

1.3 Project Scope

The FSMP 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

At minimum, we completed the following items:

a. Reviewed existing means of delivering fire services, including an investigation of strengths and opportunities, budgets, human resources, service delivery protocols, bylaws, recommendations for each, etc.
b. Consulted with the fire service staff to understand how fire and emergency response services are delivered, with a view to ensuring existing efficiencies continue, effectiveness is documented, and areas that require improvement are identified.
c. Consulted with key stakeholders to understand what is and what is not working in fire emergency response service delivery.
d. Identified needs, opportunities, and concerns with a view to requirements for streamlined and effective services for residents and safety of emergency responders, financial efficiencies, proper infrastructure, fair compensation, and rewards for emergency responders, etc. We reviewed the following items as part of completing this project:
    i. Risk
    ii. Staffing
    iii. Fire station location(s) and functionality
    iv. Levels of service
    v. Long-range planning
    vi. Administrative needs
    vii. Bylaws, Policies and Procedures
    viii. Reporting structure and requirements
    ix. Fire prevention & public education
    x. Code requirements
    xi. Mutual aid and fee for service agreements
    xii. OH&S, Health/ Wellness & Mental Health
    xiii. Training and Training Facilities

xiv. Emergency Management
xv. Apparatus and equipment inventories and requirements
xvi. Identification of appropriate comparators

e. Reviewed the growth in population and activity within the community and areas of jurisdiction over the next 10 years and the potential impact to service delivery and operations of the Fire Department.
f. Reviewed all areas including staffing, station location, vehicles, and apparatus (new and replacement cycles), vehicle and apparatus maintenance, other equipment, administration, training, mechanical, fire prevention, emergency planning and public education.

1.4 Standards and References

This plan considers the following references and standards:

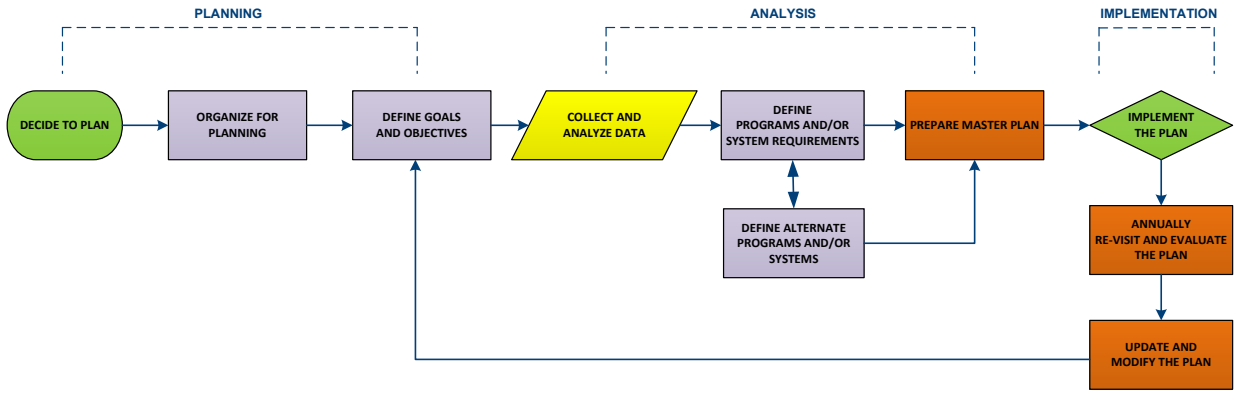
- Alberta Occupational Health and Safety, Guide for Firefighting, 2019
- Municipal Government Act, September 1,2020
- Alberta Building Code Limiting Distance and Fire Response Requirements
- Alberta Safety Codes Act, July 23, 2020
- National Building and Fire Code of Canada, Alberta 2019 Editions
- Commission on Fire Accreditation International
- Canadian Standards Association (CSA)
- Fire Underwriters Survey (FUS)
- National Fire Protection Associations Standards (NFPA)
- Underwriters Laboratories (UL/ULC)
- Service provisions from similar communities and other authorities

1.5 Fire Services Master Plan Process

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

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

Figure 1: Fire Services Master Plan Process



1.6 Consultative Process

1.6.1 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 for the fire service stations. Visiting the station provided an opportunity to conduct a general condition and operational functionality assessment. This tour also provided the opportunity to meet with various Fort Saskatchewan Fire Department (FSFD) staff and discuss their respective interests regarding the FSMP development.

1.6.2 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	Troy Fleming	City Manager
2	Janel Smith-Dugid	GM, Infrastructure & Planning Services
3	John Dance	GM, Corporate Services
4	Heather Cowie	GM, Community & Protective Services
5	Jeremy Emann	CFO
6	Craig Thomas	Director Planning & Development
7	Mark Morrissey	Director Economic Development
8	Grant Schaffer	Director Fleet, Facilities & Engineering
9	Todd Martens	Fire Chief
10	Jay Parsons	Assistant Chief
11	Doug Stein	Assistant Chief
12	Jeff Fox	Assistant Chief
13	Darrick Graff	Union President

1.6.3 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 40 potential participants; 19 (48%) participated in the survey. Most survey respondents (62%) did not feel that the community received adequate fire protection, while 11% of respondents did 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 (69%) expressed a concern that FSFD was not currently adequately staffed.

There was no indication that medical responses were over-tasking the department. Half of the participants agreed that the FSFD experienced a high degree of turnover and 70% felt that the recruiting program could be improved. Their perception on whether general training was adequate was divided however most felt that specialty and leadership training could be improved, and that ideally new recruits could receive more training before being assigned to full duty.

When asked, the top five perceived community risks were as follows:

1. Inadequate FSFD staffing levels
2. Ambulance response times
3. Industry in the city (dangerous goods)
4. Increasing population and high-density buildings
5. Current response model

Further, most of the participants felt the fleet of emergency vehicles and fire apparatus was acceptable. More than half of the participants felt that the fire station was not meeting their functional requirements or strategically located for adequate geographical coverage.

(See Appendix D for online survey results).

1.6.4 Municipal Comparative Analysis

An industry peer comparative analysis[3] of FSFD 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.

[3] *Please see Section 3.17, Municipal Comparative Analysis, Page 76*

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

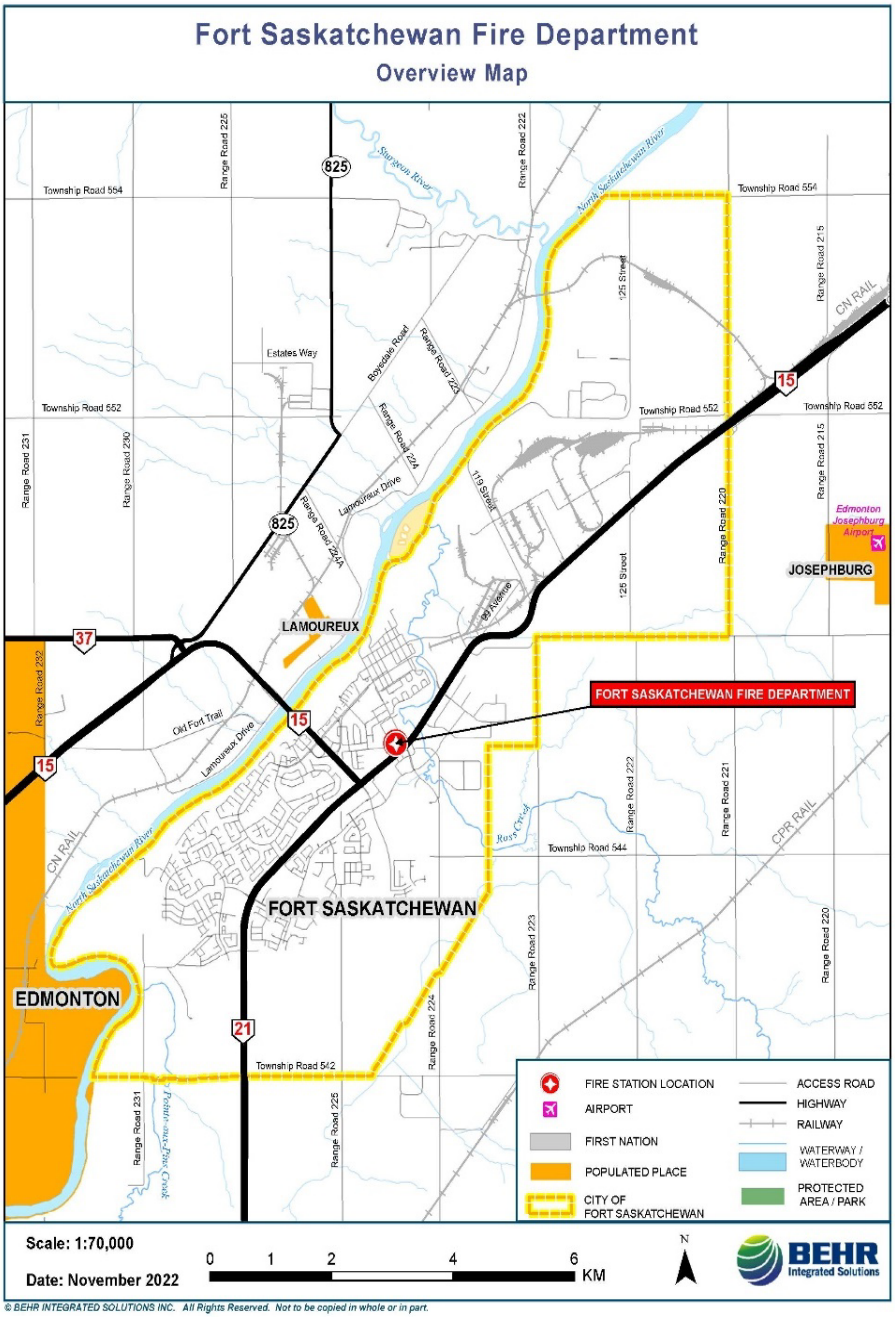
Department-Specific Considerations

- 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

Map 1: Fort Saskatchewan Overview Map



The City of Fort Saskatchewan is situated on the south bank of the North Saskatchewan River, bordered by Strathcona County to the south and east, northeast Edmonton on the most western edge, and Sturgeon County, across the river along the northwestern portion of the city. It is located approximately 20 km north-east of Edmonton at the junction of Highways 15 and 21, and approximately 25km from Sherwood Park.

With a land area of approximately 57.8 km^2, Fort Saskatchewan has a current population density of 485.8/km^2 including recently annexed lands are included. At the time of this census there was 10,420 dwelling units within the community.

The city is bisected east/northeast to west/southwest by a combination of Highway 21 and Highway 15. Highway 15 also bisects the north portion of the city running southeast/northwest across the North Saskatchewan River into Sturgeon County. These roadways, and multiple rail lines of CN Rail and CP Rail are within the

boundaries of the city and, form a major portion of the surface transportation network that serves Alberta's Industrial Heartland and the City of Fort Saskatchewan. A significant percentage of Fort Saskatchewan residents commute within the area including Edmonton for employment, entertainment, and post-secondary education.

Beginning in the early 1950s, Fort Saskatchewan has become known for its industrial, mineral, and petrochemical facilities, which include Dow Chemical, Sherritt International, Nutrien and Shell Canada. Fort Saskatchewan has also been the site of territorial/provincial correctional facilities since the late 1800s and currently hosts the Fort Saskatchewan Correctional Centre, a minimum-medium security facility for up to 550 provincially sentenced offenders.

Fort Saskatchewan is a service centre for the surrounding primary trading area, and its thriving agricultural and industrial community. The area hosts significant production of agricultural inputs as well as an extensive agricultural service sector. Within the city there is a considerable industrial manufacturing base focused on mineral refining and petrochemical production. This is replicated in the adjacent areas of Sturgeon and Strathcona Counties who are also municipal partners in Alberta's Industrial Heartland.

Fort Saskatchewan has recreation and cultural facilities, and a diversity of amenities and tourist attractions that offers the benefits of smaller city with much of the service provision of larger urban centres.

2.1.1 Economic Development

Fort Saskatchewan is part of a major hub for petroleum refining, petrochemical manufacturing, and bitumen upgrading. The region is also a key strategic link in Alberta's energy logistics chain, with multiple oil and gas pipelines, fractionation facilities, and oil terminals. Local industry spends $1.5B annually to purchase local good and services not including utilities and feedstocks.

Fort Saskatchewan has attracted considerable economic development throughout its history. There are numerous sectors that provide a diversified and sustainable economy. Fort Saskatchewan is home to a thriving and diverse business community. The primary industry clusters are petrochemical manufacturing, fabrication, transportation, and advanced manufacturing.

Table 2: Fort Saskatchewan Major Employers

Employer	Employees	Industry
Dow Chemical Canada	626	Chemical Manufacturing
Sherritt International	544	Primary Metal Manufacturing
Walmart	208	General Merchandise Store
Fort Saskatchewan Community Hospital	200	Hospital
United Safety	200	Mining Support Activity
Safeway	160	Food and Beverage Store
Rivercrest Lodge Nursing Home	117	Social Assistance
Home Depot	110	Building Material and Garden Equipment and Supply Dealer
Co-op Station Square	100	Food and Beverage Store
Nutrien	87	Chemical Manufacturing
Plains Midstream Canada	85	Oil and Gas Extraction
Murray's Trucking	81	Truck Transportation
Chris' No Frills	81	Food and Beverage Store
The Canadian Brewhouse	80	Food Service and Drinking Place
Golderado Contracting Corp.	77	Administrative and Support Services
Boston Pizza	76	Food Service and Drinking Place
Win Ferguson Community School	75	Educational Services
Canadian Tire	75	General Merchandise Store
Carey Industrial Services	70	Administrative and Support Services
Oerlikon Metco Canada	70	Fabricated Metal Product Manufacturing
Gemini Field Solutions	70	Repair and Maintenance
Providence Grain Solutions	67	Warehousing and Storage

Note: *these do not include contractor or part-time employees/employers*

2.1.2 Growth Projections

The 2021 Canada Census[4] determined Fort Saskatchewan's population to be 27,088 ,which was a 12.1% increase since the 2016 Census. With a continued projected annual population growth rate of over 2.7%, Fort Saskatchewan's population is estimated to more than double by 2050 as part of the expected regional economic growth.

[4] *https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?Lang=E&SearchText=Fort%20Saskatchewan&DGUIDlist=2021A00054811056&GENDERlist=1,2,3&STATISTIClist=1&HEADERlist=0*

2.1.3 Community Demographics

Fort Saskatchewan's demographic profile has 86.9% of population under 65 years of age (2021) and 20.1% are under 15 years old. The average Fort Saskatchewan resident would be classified as:

- Median age of 34.4
- Married with two children
- Earning an after-tax household income over $120,000
- English speaking
- Canadian born
- Owns their own home
- Works outside the home and the city full-time for other employers,
- Commutes less than 30 minutes each way to work
- Completed a post-secondary certificate, diploma, or degree

2.2 Community Planning and Development

The City of Fort Saskatchewan is one of thirteen members of the Edmonton Metropolitan Regional Board (EMRB)[5] that was created to harmonize, coordinate, and guide growth and investment within the provincial capital area. The growth plan for EMRB expects the region's population to reach two million by 2044 and focuses on minimizing the disruption of the natural environment and agricultural land while encouraging densification within and in proximity to current development.

Fort Saskatchewan's *Land Use Bylaw C23-20*[6] establishes the administrative structure and devices by which land use is to be regulated within the city. It serves as the principal regulatory planning tool for the city by prescribing what uses and developments may or may not be affected on each parcel of land within the municipality. The land use bylaw also facilitates the orderly, economical, and beneficial development and use of land and buildings within the city.

It covers a wide range of policy and regulations, including:

- Establishing the development permit process and process for rezoning and amendments,
- Designates the subdivision approval authority
- Regulates the size and use of land and buildings
- Classifies and denotes land use districts and describes minimum development standards for each of these districts
- Describes the appropriate permitted and discretionary land uses for each district

[5] https://www.emrb.ca/

[6] *https://www.fortsask.ca/en/your-city-hall/resources/Documents/Land-Use-Bylaw/LandUseBylaw-C23-20.pdf*

Every portion of land in the city is assigned a general land use district designation or zoning at the time of subdivision approval. This designation often evolves as newly annexed lands move towards the final land use designation. Each district has a different intended land use and includes the types of structures and facilities permitted.

The land use bylaw is regularly amended and updated to manage the type, location, and direction of development. Previously this process did not formally involve the FSFD in evaluating the potential impacts that development decisions may have on their emergency response levels and services.

Observation #1: The communication and collaboration has increased between the planning and development department and FSFD, however, there is no formal or documented review process.

Recommendation #1: The fire chief and city administration create formal policy that includes FSFD in the subdivision, land use and development planning processes.

(Suggested completion: 12-24 months)

Rationale: *Establishing a policy ensures FSFD is consistently and directly involved with reviewing subdivision, land use and development proposals to determine potential impacts on FSFD effectiveness to provide emergency services to residents. This would align the level of fire protection services with growth and development the FSFD needs provide input in subdivision, land use and development proposals.*

Alberta's Industrial Heartland is a 194 square kilometre (75 square mile) area located northeast of Edmonton which includes portions of City of Fort Saskatchewan, Strathcona County, Sturgeon County and Lamont County. Alberta's Industrial Heartland is one of Canada's largest processing centres for petroleum, petrochemicals, and chemicals, with tens of billions of dollars in existing and planned investment. Over thirty companies are in the area, including international and Alberta-based petrochemical corporations. Additionally, the natural salt caverns within the area are being used for the storage of natural gas and there has been recent growth in carbon capture and storage.

Within the City of Fort Saskatchewan's portion of the Alberta's Industrial Heartland, most of the land has been in heavy industrial use since the establishment of Sherritt Inc.'s mineral refining operations in 1952 and Dow Canada's petrochemical production facility development in 1959.

The city is guided by the *City of Fort Saskatchewan Alberta's Industrial Heartland Area Structure Plan,* as Bylaw C19-00.

2.3 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, geography, demographics, economic activity, operational posture, strategic goals, fixed assets, and critical infrastructure, as well as overall service delivery levels.

Risk Evaluation

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

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

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

2.3.1 Factors Contributing to Risk

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

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

- Topography
- Weather
- Historical response data

2.3.2 Risk Management

All communities require a process to identify and actively manage high-priority risks. As previously discussed, there are several approaches to managing risk. The focus of this report is to identify and discuss specific risks, and unique community characteristics that contribute to risk, typically managed through fire prevention or fire department response. Image 1 describes the risk management cycle.

The 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 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 municipal council.

Image 1: Risk Management Cycle Process

The final step in the cycle is to consistently measure and report those results to key policy makers. This cycle should be repeated periodically, ideally annually, to address changes in the municipality and its risk profile, and from that make thoughtful and informed decisions regarding strategies utilized to manage the impacts of those changes.

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 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 is determining the best balance between investing in emergency services and accepting a certain level of risk.

2.3.3 Risk Evaluation vs. Service Levels

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

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

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

- Life safety impact: Life safety risk for victims and responding emergency personnel are the highest order of consequence when considering the risk associated with specific event types. Events with a high likelihood of injury/death occurring and even a moderate probability of occurring require close examination to ensure adequate resources required to safely rescue or protect the lives of occupants from life-threatening are accessible to respond. Incidents that risk life safety include motor vehicle accidents, extreme weather, flooding, fire, release of hazardous materials, medical emergencies, and all types of rescue situations.
- Economic impact: Events with high negative impact on the local economy are devastating to a municipality. For example, 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 "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 and therefore must be considered.

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

As discussed, the risk evaluation process is used to identify high-priority risks and the appropriate risk management strategy. Where a fire department response is determined to be the most appropriate management strategy, the appropriate services and service levels should be established to safely manage the risks. Elected officials are responsible for determining which services are delivered and setting the service level goals that guide that 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 risks.

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 or leave this to individual property owners. In Alberta there is no legislative mandate in the Municipal Government Act for a municipality to provide fire services, but this has become a core service area for most urban and many rural municipalities.*

Distribution *refers to the number of fixed resources, such as fire stations, and where they are placed throughout the community. Distribution varies depending on factors related to the number of incidents and types of calls for service in the defined area.*

Concentration *refers to the assembling of resources, such as a specialized work force and equipment, needed to effectively respond to an incident in each area within the community. It must also identify the availability of additional response resources including the reliability and time of arrival of a secondary responding unit.*

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

Figure 2: Risk Evaluation Matrix

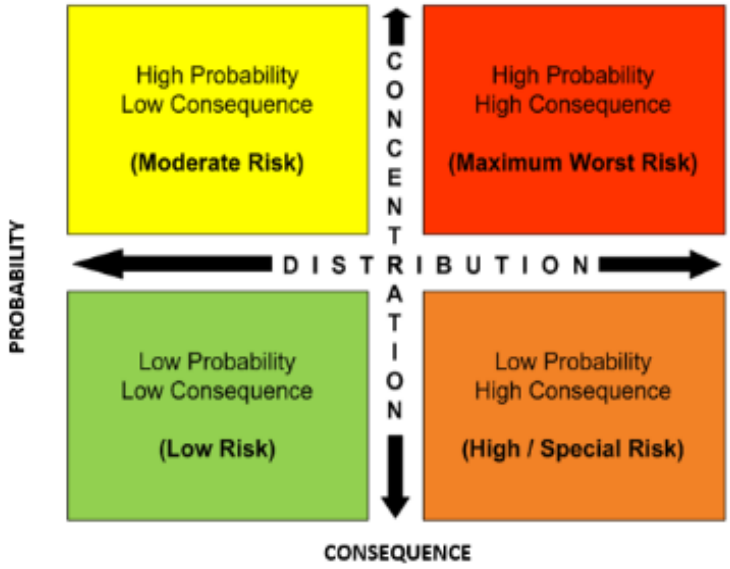


Table 3 offers examples of categories of types of structural fires and general hazards commonly found in communities. As described above, these risks are categorized by considering the probability and consequence of the fire or hazard. This qualitative analysis is based on experience and expertise, and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

Table 3: Risk Inventory (Sample Only)

Low Risk = Low Probability and Low Consequence

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

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

Moderate Risk = High Probability and Low Consequence

Most responses fall under this category. Moderate risks include:

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

High Risk = Low Probability and High Consequence

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

- Commercial, industrial warehouse
- Dangerous goods incidents with large quantities of known products (75 litres or more), unknown products or large exposure
- Hospitals, care homes, institutions
- Derailments & transportation of dangerous goods
- 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, serve storms etc.)
- Large vehicle accidents, pileups, derailments
- Quantities of known flammable products (500-1000 litres)
- Explosions or substation electrical fires
- Confirmed natural gas leak

2.4 Structural Fire Risk Analysis

It is critical to use careful planning and consider alternative solutions and innovations when managing risk because the ability of any municipality to increase the distribution of resources and add capacity is ultimately limited by what the taxpayers and community are willing to pay for to provide services. Spending large amounts of time and resources to manage a risk with low frequency/low consequences will have limited impact and generate minimal improvement in community safety. When planning for fire department response, the planning process includes a detailed review of the past and expected frequency of events, and their potential consequence(s), to ensure prevention, education, and response efforts maximize life safety and minimize negative consequences for high-priority events.

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

Analyzing structural fire risk begins by developing an exhaustive inventory of existing building stock and monitoring changes to the inventory. This process should include staff from the planning and development departments, as well as the municipality's building and fire SCOs. This provides the SCOs with an opportunity to evaluate the requirements of the National Building and Fire Codes of Canada (2019 Alberta Edition) in the design, construction, and operation phases of the building.

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 including single and multi-family residential, assembly (including schools, churches, recreation centres, etc.), institutional (treatment, care, detention), service businesses, mercantile (commercial, retail), and industrial properties.

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

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

Table 4: Example of Basic 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.)	40	2
Institutional (prisons, hospitals, care homes etc.)	15	1
Residential - single family	2000	86
Residential - multi-unit	40	2
Business and personal services	100	4
Mercantile	100	4
Industrial	20	1
Total	2,315	100

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

The 2021 Statistics Canada Census provides a count of residential dwellings within the city. The analysis of this data identifies that a limited number of multi-unit residential properties exist in Fort Saskatchewan and there are no apartment buildings with five storeys or more in the city. Single and semi-detached homes are the primary residential unit type at 77.5%.

In conjunction with the residential structural fire risk there are additional risks in the city with the ongoing development including medium and high hazard industrial manufacturing and processing facilities.

Observation #2: The planning & development department and FSFD maintain separate inventories of structures and facilities including general risks. Given the projected growth a corporate level integrated data system would enhance the tracking and usefulness of structural inventories in Fort Saskatchewan This centralized system would have building and hazard pre-planning information, integrated building and fire inspection information, and site-specific hazard and risk related information.

Recommendation #2: The City's IT department to evaluate the feasibility of a centralized system to maintain building, facilities, and structure inventories data.

(Suggested completion: 48-60 months and ongoing)

Rationale: *Current and accurate information on all buildings and structures allows FSFD, and other municipal departments, to assess the impact of future growth including potential increases more readily to programs and services.*

Building inventories should continue to be classified, documented, and maintained utilizing both the National Building Code of Canada – Alberta 2019 Edition - Major Occupancy Classification system and the city's Hazard Identification and Risk Assessment (HIRA) processes.

2.5 Community Risk Analysis Overview

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

- Community growth and anticipated additions and changes to building stock in FSFD response zones
- Multiple road transportation corridors
- Major rail transport system within the city boundaries
- Dangerous goods release
- Grassland/crop/brush interface fires mixed with wind and high temperatures
- Limitations of the composite fire suppression staffing model
- Reliability of firefighting water supply

2.5.1 Fire Department Response Demand

One of the challenges for FSFD is the broad mix of occupancies within the city. Within Fort Saskatchewan, there are numerous locations presenting multiple, sometimes unknown, risks including:

- Industrial
- Manufacturing
- Petrochemical
- Oil and Gas
- Country residential
- Commercial
- Medium to heavy industrial (which may include on-site research and additional unknown hazards)
- Transportation (trucking and rail spurs) for minerals, petrochemical products, flammable liquids, and gases

The structural fire risks and other specific identified hazards within the city should be analyzed and rated using the risk matrix methodology. The information obtained should be used to determine types and service levels necessary to manage these risks.

Observation #3: As is noted in Section 4, FSFD is challenged to provide an initial fire response within the performance measure (10-minute response time in 90% of all structural fire responses) prescribed in the National Building Code of Canada – Alberta 2019 Edition. This will be exacerbated as additional development occurs in areas outside the existing developed footprint. Further validation regarding this challenge is identified in the 2020 Fire Underwriters Report. This analysis indicated the following:

> *'the current fire hall covers 28% of properties under initial response benchmarks. Adding a secondary station would increase the coverage by approximately 50-60% depending on final placement'.*

While efforts to reduce call handling time and other communication improvements may improve response times and increase performance, the distance travelled from a single location will always remain a significant limitation for fire response. The two most effective options to meet this requirement would appear to be:

1. Provide an additional station location with adequate staffing to achieve the "10 minutes in 90% of instances" structural fire response time performance threshold as per the NBCC-AB19, or
2. Direct that one of the variances noted in the NBCC-AB19 (Articles 3.2.3.1. for large buildings, 9.10.14.3. for small buildings other than houses, or 9.10.15.3. for houses) be implemented in all construction outside the 10-minute zone within Fort Saskatchewan. Briefly those variances are:
    a. double the minimum spatial distances to the property line,
    b. sprinkler the buildings in accordance with NBCC-AB19 Division B Article 3.2.5.12, or
    c. require more stringent requirements for developments where the exposed building faces are constructed with reductions in the maximum area and spacing of unprotected openings (windows/doors), fire resistive construction, and non-combustible cladding.

Recommendation #3: The city establishes a regulation or bylaw for all new developments that enforces compliance with the NBCC-AB19's limiting distance and fire department response requirements.

(Suggested completion: 12-36 months)

> ***Rationale:*** *The municipality must determine which option it will utilize to achieve compliance for new construction in undeveloped areas to meet the requirements of the NBCC-AB19 and the preferred approach, including all requirements, variances, or incentives, in an appropriate municipal statute.*

2.5.2 Multiple Transportation Corridors

As noted previously the city is bisected east/northeast to west/southwest by Alberta Highways 15 & 21 and southeast to northwest by Highway 15. These, in addition to the CN Rail and CP Rail lines and trackage are the main surface transportation networks within the boundaries of the city. There are additional highways and rail trackage in the surrounding area which feed into/out of 21 and 15 to serve local area industry.

Both the road and rail systems transport a significant amount of dangerous goods throughout the area. In addition, there are multiple dangerous goods transmitted in liquid, slurry, and gaseous states throughout the area.

A significant FSFD response risk associated with these heavily travelled roadways is an increasing number of motor vehicle collisions (MVCs) as well as an increased probability for a collision involving many victims, or a mass casualty incident. MVCs are typically a moderate risk, low in consequence but relatively probable across the region.

While events involving multiple casualties are less frequent, these events are considered a maximum risk, as the consequences of these types of events are considerably greater than smaller MVCs and can overwhelm the fire rescue and emergency medical services response resources of most communities.

2.5.3 Dangerous Goods Response

Dangerous goods and hazardous materials are routinely transported through the city on roadways and on the peripheral of the city via rail lines. It is important to note that during the development of this master plan a draft dangerous goods bylaw was being considered by council. The city has also established a commercial vehicle peace officer as part of community safety enforcement.

The quantities and types of materials transported by road on the highways are not typically monitored and documented. The nature of road transport increases the probability that this is the most likely mode of potentially dangerous goods incident in the city. FSFD members have a general awareness of these materials and quantities based on regular observation of activity and highway traffic.

Although the probability is relatively low, and awareness and planning for such an event has been high for many years, an incident involving the release of hazardous materials in Fort Saskatchewan could have devastating life safety, economic and environmental consequences.

Petrochemical and mineral production within the area, as well as storage and processing facilities, pipelines, and chemical processes compound the risk of a dangerous goods release within the city and FSFD's response area. Depending on the magnitude of the release and risk the products present to life safety, an event involving the release of dangerous goods may be categorized as high or maximum risks (see Table 3).

Controlling a release of dangerous goods often requires highly specialized training and equipment. Although the probability of an incident of this type is low to moderate, these incidents are typically categorized as extreme or very high hazard events. Given the types and quantities of dangerous goods being transported by road, rail and pipeline, the resources required to safely manage these events will exceed the required competencies and capacity of all but the largest communities in Alberta. As a result, fire departments from mid-sized municipalities typically only provide an initial response to identify the issue and initiate an evacuation process as required. In most cases, significant releases almost always require support from agencies able to maintain specialized competencies and equipment to completely control the release.

FSFD is fortunate in that the industries within the area are very hazard aware and participate in regional planning, training, and response programs. Along with its municipal neighbours and industry partners the city is a long-term member of the Northeast Region Community Awareness Emergency Response (NRCAER) mutual aid emergency response association. This helps to promote safety, awareness, training, and response for incidents within the greater area.

Observation #4: There are numerous intersecting roadways and rail crossings which increase the risk of collisions, including those involving hazardous materials. It is noted that the rail crossings are located within the various industrial sites in close proximity to the city Regardless a major hazardous material release due to a collision near populated area is assessed as a low probability, high consequence event that could result in a high to extreme life-safety risk.

Recommendation #4: FSFD should continue to, evaluate, and modify response protocols and pre-incident training scenarios for dangerous goods.

(Suggested completion: 36-72 months)

***Rationale**: Continued engagement and improvement of partnerships with rail, trucking, pipeline, and other local industry representatives is required to enhance knowledge of the types of dangerous goods being used in and transported through the city. This information is invaluable to the FSFD to develop and modify response protocols and pre-incident training scenarios. Additionally, a periodic estimate and assessment of the volumes of dangerous goods transported through the response zones will inform future hazard identification and risk assessments (HIRA).*

2.5.4 Wildland Urban Interface Fires

As residential, agricultural, and industrial development activities continue to increase, and given the drier conditions becoming typical, wildfires both from surrounding crop/brush lands and the river valley are year-round extreme risks. Most significant wildland fires in the area have occurred during early spring.

Public education for residents abutting the interface about FireSmart principles through meetings, media, and demonstration plots within the area, possibly in conjunction with Strathcona County Emergency Services, could be used towards that end in addition to implementing leading practices in engineering and education to reduce the threat.

Observation #5: There are opportunities to formally support the FireSmart program for grass/cropland situations, especially to residents and industry within the Heartland area that abuts Fort Saskatchewan. There are grants available through provincial programs to assist municipalities to complete plans and implement risk reduction strategies. Joint response to larger prolonged grass/crop wildfire incidents may be partially compensated through the Municipal Wildfire Assistance Program which compensates the municipality based on a funding formula for overall incident expenses.

Recommendation #5: Work with Strathcona County to create a grass/crop wildfire prevention plan and encourage implementation of the FireSmart program.

(Suggested completion: 48-120 months)

Rationale: *The community grass/crop wildfire prevention plan, along with the implementation of FireSmart program principles will provide property owners information and an opportunity to prevent the spread of grass/crop wildfires within the county. Grant funding may be available from Alberta Agriculture & Irrigation and Alberta Forestry.*

2.5.5 Limitations on the Provision of Fire Prevention and Public Safety Education

Interviews, discussions, and review of the 2020 FUS Report indicates that regular fire inspections of properties listed within the city's Fire Quality Management Plan and Building Inventory are a concern. On-duty shift-based inspections currently being attempted are usually delayed or not completed due to other higher priorities including emergency responses and required training. In addition, the fire SCO certification levels to conduct fire inspections for institutional and care facilities (Group B1 and B2) requires additional training. On-duty shift inspections for these occupancies would require this training.

As discussed in Section 3 there is a proven and consistent correlation between community risk reduction efforts through inspections and education and a reduced number of fires, fire injuries and fire deaths.

The FUS survey notes that scores in these two areas (consolidated as Fire Safety Control in their grading table) were significantly below scores in all other areas studied and resulted in a score of 5 out of 10. Fire and life-safety inspections are scheduled to be conducted in accordance with the fixed schedules identified within Fort Saskatchewan's Quality Management Plan.

Observation #6: There is a current backlog of uncompleted inspections due to the challenges of these non-emergency response activities being assigned to the platoons. The projected growth of businesses, structures, and facilities in the city, will further exacerbate this shortfall. Further the sustainability of the city's fire accreditation may be at risk.

Recommendation #6: Establish two full-time FSFD fire safety codes officer positions or alternatively contract out safety code, fire discipline requirements, ,

(Suggested completion: 12-36 months)

Rationale: *Formally establishing a dedicated safety codes fire discipline function will support the requirements of the City's and Fire Discipline Quality Management Plans, as well as the fire safety public education programming. It will also help to ensure scheduled, risk-based, and other required inspections and investigations are completed. The owner, occupant, and public safety education programs are required to ensure the objectives of the QMP are being met effectively for the benefit of residents.*

The Government of Alberta (GoA), under the *Safety Codes Act* through the Safety Codes Council, requires accredited municipalities to regulate the development, construction, and fire protection requirements in the municipality through the application of the NBCC AB19 and the NFCC AB19. As discussed, having current integrated building/facility inventory systems which assign a property risk profile thus identifying high-priority risks and facilitating development of risk management strategies is of value in management of these compliance and education activities.

Observation #7: FSFD currently strives to provide fire inspections on a scheduled basis based solely upon the major occupancy classifications contained in the NBCC AB19. The schedules do not provide any further refinement based upon the relative risk posed by different sites, occupancies, activities, and products.

Recommendation #7: Fort Saskatchewan update the inspection schedules within the Fire Discipline QMP(s) to initiate a risk-based inspection program and upon request or complaint.

(Suggested completion: 12–24 months)

Rationale*: This type of program will provide methods to further quantify site risk and direct a priority-based schedule focusing inspection and compliance efforts on structures and facilities presenting a high level of life and/or fire safety risk.*

2.5.6 Severe Weather Events

The City of Fort Saskatchewan experiences significant risks from severe weather events. The following severe weather events are listed as extreme or very high:

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

Given the relatively static elevation of the city, and its proximity to and elevation above the North Saskatchewan River, overland flooding events are typically not high life-safety events in southern Alberta but may pose significant risks to critical infrastructure as would high river flows.

Additionally, tornadoes, wind shear, plough wind, and microburst winds may pose a considerable threat to life safety with increased consequences in urban areas like Fort Saskatchewan. High winds can cause significant property damage, and interruption to critical infrastructure including electrical power distribution, communications systems, and transportation corridors.

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

SECTION 3
DEPARTMENT PROFILE

3.1 Department Overview

FSFD was established in 1906 to serve the citizens of the City of Fort Saskatchewan. Today's FSFD is a composite fire service, relying on a group of career full-time firefighters, supported by paid-on-call (POC) firefighters responding out of a single fire station located at 10099 93 Avenue.

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

The anticipated growth in development and population within the city will challenge FSFD to maintain the current level of service going forward. It is desirable to ensure current services and infrastructure is in step with future development. In the case of a fire service, the lead-time to have a second station, staffing and equipment in place at the appropriate time is validating the need to develop a masterplan that is aligned with council priorities.

While volunteer fire departments have a long-valued service history with their respective communities throughout North America, there may be a point that necessitates a transition toward a full-time delivery model. FSFD has transitioned to the composite model because of increased call volume, complexity, and resource demand within their service area. As the city grows, incident volume increases and risks increase, it may warrant further review into transitioning to a full-time career department in the future.

The people within this service have dedicated their time and energy to faithfully serve their communities by using training, technology, and commitment in providing valued service to the citizens and visitors to the city. FSFD is a proud department that values their past, embraces the present and looks forward to the challenges of the future.

3.1.1 Community Vision, Mission, Core Values and Guiding Principles of City of Fort Saskatchewan

A fire department along with all other city departments subscribe to Fort Saskatchewan's overall Vision, Mission, Core Values and Guiding Principals. Vision offers insight into where the city strives to be in the future. Mission, Core Values and Guiding Principles is the how the vision is attained.

The following is Fort Saskatchewan's vision, mission, core cause and guiding principles:

Vision

We are a welcoming, compassionate city. MY FORT: Engaged People, Thriving Community.

Mission

Working together to create a sustainable and thriving community through exemplary leadership and management.

Core Values

Our Commitment to each other and to our citizens: Leadership; Innovation; Service Excellence; Fun.

Guiding Principles

Just as our values are reflected in everything we do; our decisions and actions are aligned with the following guiding principles. Continuous Improvement; Collaboration; Strategic Thinking; Stewardship.

3.2 Human Resources

Whether full-time (career), POC; a fire department's employees are its most valued asset. Emergency services are often delivered under difficult and stressful circumstances, with little room for error. Fire departments must be adequately resourced with staff, equipment, and training to be effective in delivering the highly technical services to achieve service excellence. As a result, a considerable effort is warranted to ensure that only highly committed, team-oriented, and physically able employees are recruited, trained, and retained.

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

3.2.1 Staffing Complement

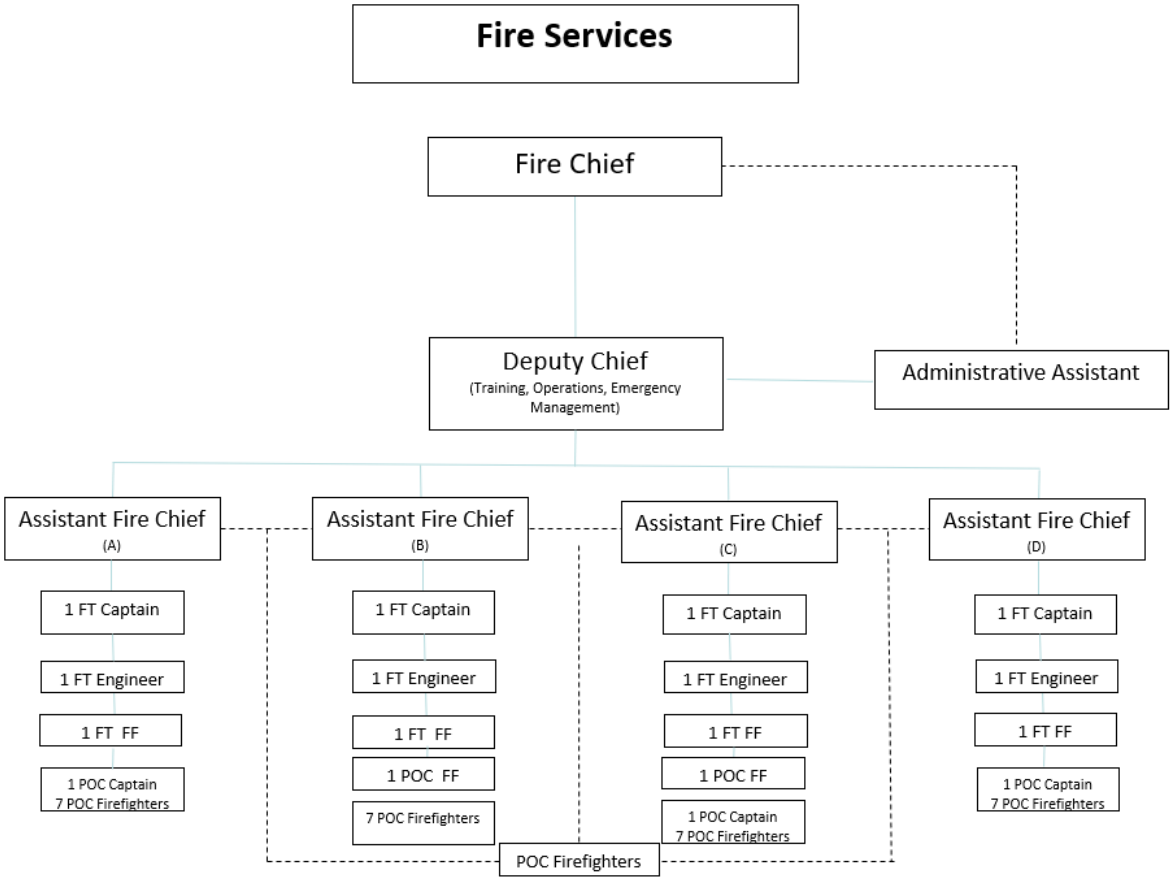
FSFD maintains an administrative structure supporting a combination of career full-time and POC firefighters to deliver emergency services, and fire prevention within Fort Saskatchewan. The current FSFD organizational structure represents the career full-time, and POC positions:

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

- 1 fire chief director of emergency management
- 1 deputy chief, operations, training, and emergency management
- 4 assistant chiefs
- 4 full-time captains
- 6 full-time firefighters (2 firefighters added in 2023)
- 28 POC firefighters
- 1 administrative assistant

Note: *FSFD staffing levels of POC volunteer firefighters vary given the recruitment and retention challenges.*

Figure 3: Fort Saskatchewan Fire Department Organization Chart (2023)



The minimum on-duty strength of four staff that provide 24/7 emergency response coverage includes:

- Assistant fire chief (1)
- Captain (1)
- Firefighter engineer (1)
- Firefighter (1) (currently two platoons only)
- POC firefighter (1)

During the interviews it was identified that maintaining the minimum duty strength of four is a challenge. Staffing levels, emergency response capacity and the Effective Response Force (ERF) is discussed at Section 4 of this FSMP.

3.2.2 Department Leadership, Management and Operations

Effective leadership and management start at the top of an organization to guide it 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 to determine effectiveness
- Ensuring value for service

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

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

The following theoretical figure suggest 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

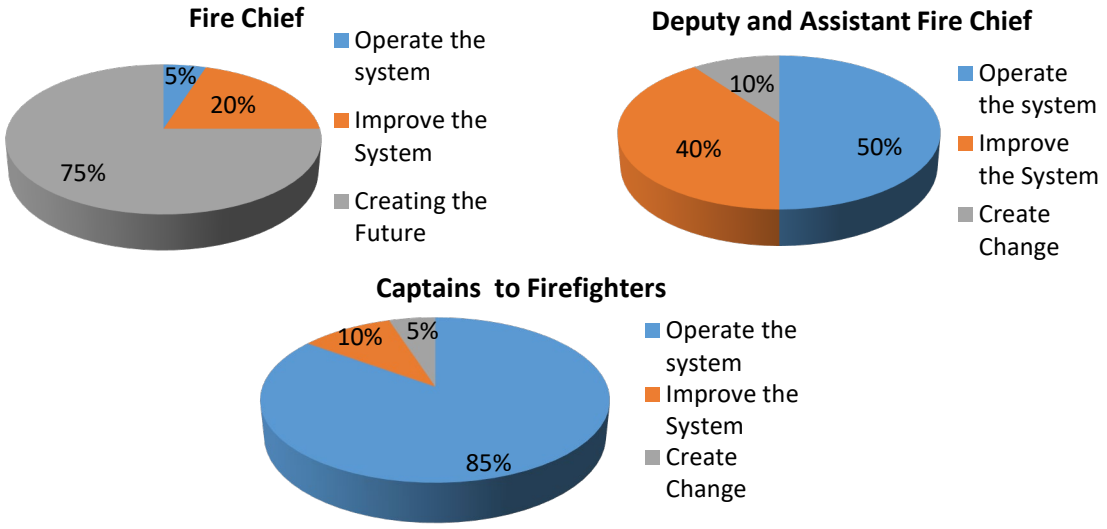


Figure 4 illustrates two important points: one, the amount of time allocated to operating, improving, and identifying strategy varies at different levels in the organization; two, senior leadership positions in the FSFD must retain the capacity to identify and implement change.

It is extremely important that administration works closely as a team. A highly functioning team is one that understands each person's roles and responsibilities and brings their skills together in a collaborative manner to lead the organization in achieving their vision, mission, and goals. Therefore, it is important to ensure that accurate and updated job descriptions are made available to each team member to promote role clarity.

Traits of a high performing team include:

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

Leadership is a function of all members of the FSFD. 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 assistant chiefs and each station officer. These positions play a critical role in leading, managing, and mentoring firefighters. This role is crucial in ensuring firefighter practice is aligned with department policy, as well as being the critical link in the chain of command between firefighters and chief officers.

Current community growth projections, risk factors, POC attrition and increasing management demands associated with maintaining a diverse composite service will require additional operational and administrative staff capacity. The chief officers should be focusing most of their time on improving the current system and creating change to meet future challenges.

FSFD officers and firefighters are responsible for the delivery of most services. They are the primary point of interaction between a fire department and someone in crisis or the public. Their leadership is exhibited by their professionalism and commitment to service excellence. Although their influence may be limited to their immediate coworkers, their role in forming public perceptions regarding the value and support of their services is critical.

Finally, 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, other chief officers and POC firefighters. This heightens the need for senior leadership positions, including the chiefs, and station officers to communicate frequently and bridge perceived gaps regarding commitment to mission and service excellence. It also highlights the need to recruit only the best candidates to join the FSFD team.

Based upon our review, the FSFD is positioned to achieve service excellence in the future. Led by the fire chief, the leadership team needs to work closely together to guide and manage the department. The administrative team is working towards a positive and constructive relationship with the Fort Saskatchewan Firefighters Association, IAFF Local 5277 executive. Further, FSFD firefighters show a high degree of pride and commitment to the department and their community.

3.2.3 FSFD Administrative Positions

The FSFD administrative positions consist of the fire chief, one deputy chief and four assistant fire chiefs. The assistant fire chiefs follow a platoon on a 24/7 shift rotation. The capacity of the FSFD administrative positions is strained to complete their current respective roles and

responsibilities partially based on the assistant fire chiefs (AFC) working the 24/7 shift rotation with operational and administrative responsibilities.

Current community growth projections, risk factors and increasing management demands associated with maintaining a fire service will require additional operational and administrative staff capacity. The chief officers should be focusing most of their time on improving the current system and creating change to meet future challenges. In our opinion there is a shortfall with the distribution of the administrative level supervision/management capacity.

Observation #8: When compared to similar sized departments, the FSFD administrative leadership team size shown in the organizational chart is consistent with industry leading practices *(See Section 3.17 Municipal Comparators).* However, the portfolios assigned to the fire chief and deputy that includes operations, training, fire inspections/investigations administration, and emergency management results in a workload shortfall. A full-time dedicated DEM is recommended in Section 3.9.

Recommendation #8: Establish a second deputy chief position to support training and fire prevention functions.

(Suggested completion: 36-48 months)

Rationale: *Each administrative position is assigned specific portfolios for the safe and effective management and leadership of the department. The recommended organization response matrix would allow for roles and responsibilities to be evenly distributed through the administration team and create capacity to undertake and complete fire service management and strategic level requirements including those recommended in this FSMP.*

3.2.3.1 Fire Chief

Reporting to the general manager, community and protective services, the fire chief is accountable for the effective planning, development, coordination, implementation and delivery of fire and emergency management programs and services for the City of Fort Saskatchewan. The fire chief is also the director of emergency management.

The incumbent provides strategic short- and long-term plans for the provision of fire and emergency management programs and services within the framework of the City's corporate strategic plan. The fire chief will demonstrate an active and ongoing commitment to and role within the community in the areas of workplace safety, decision making, interpersonal skills, supervisory skills, working conditions, financial, clearances, education/training, licenses/certificates/designations, experience/knowledge/skills, computer skills and equipment.

3.2.3.2 Deputy Chief – Operations/Training & Emergency Management

Reporting to the fire chief, the deputy chief is also a member of the fire services leadership team. The deputy chief supports and implements the vison and direction of the fire chief and plays a critical leadership role in achieving the department's operational goals and objectives.

The incumbent is responsible for the overall leadership and management of the operations/training and emergency management of fire services. This position develops the department's operations, professional development training program, asset and material management, planning, overseeing the emergency management program, acting as the deputy DEM and incident mitigation.

3.2.3.3 Assistant Chief

Reporting to the deputy chief, the assistant fire chief is a member of the fire services' leadership team and is responsible for the effective and efficient management, supervision, control, and administration of the shift.

The incumbent has the utmost responsibility to ensure the platoon's readiness, safety and effective professional delivery of services and duties.

3.2.3.4 Clerk II – Fire Services

Reporting to the Deputy Fire Chief-Operations/Training & Emergency Management, the Clerk II provides essential administrative clerical support and coordination to the deputy chief, fire chief and Assistant Chief's within Fire Services Department.

The incumbent provides clerical support. The clerk II – fire services will demonstrate an active and ongoing commitment to and role within the community in the areas of workplace safety, decision making, interpersonal skills, working conditions, financial, education/training, licenses/certificates/designations, experience/knowledge/skills, computer skills and equipment.

3.2.4 FSFD Non-Administrative Positions

All FSFD full-time firefighter positions are represented by the IAFF Local 5277. The anticipated first collective bargaining agreement (CBA) between Local 5277 and City of Fort Saskatchewan will provide the wages and working conditions. The city maintains position descriptions that include the position purpose, duties, and responsibilities, as well as the qualifications necessary to hold each position.

3.2.4.1 Captain

Reporting to the assistant fire chief, the captain is a leadership position within a platoon who leads and manages a crew of engineers and firefighters assigned to a single fire apparatus and is responsible for the readiness and professional delivery of services and duties to the community.

The incumbent provides leadership and guidance to the Fort Saskatchewan Fire Departments personnel assigned to their platoon with personnel issues, in the provision of fire suppression, medical assist services, training, fire prevention and inspection activities.

3.2.4.2 Firefighter Engineer

Reporting to the captain for shift operations, the firefighter engineer is primarily responsible for the safe and efficient operation of firefighting apparatus in response to emergencies, and for pumpers, ladder trucks, and other special firefighting apparatus at the emergency scene.

3.2.4.3 Firefighter

Reporting to the captain for shift operations, the firefighter is a first responder who routinely responds to and works at incidents such as, but not limited to, fires, medical incidents, MVCs, alarm calls, hazardous materials spills or leaks, water incidents, technical rescues, and rail incidents.

3.3 Remuneration, Recruitment, Selection, Retention, Promotion

Public service is a sought after and competitive employment sector. Local governments must balance the cost of competitive salaries and benefits to attract with their search for the best candidate.

3.3.1 Remuneration

The City of Fort Saskatchewan and FSFD are committed to recruiting the best candidates possible. Competitive salaries and benefits are offered to all positions. Currently all FSFD positions are reviewed based on the Fire Services Staff Compensation Council Procedure HUM-030-C sections:

- 3.3 Compensation Review
- 3.4 Municipal Comparators

The fire chief, deputy chief, and assistant chiefs are provided a competitive salary in alignment with senior management positions in other listed comparative communities.

All non-administrative uniformed in-scope positions are provided hourly rates of pay currently identified in the Council Procedure (HUM-030-C) Fire Services Staff Compensation. The recently organized Fort Saskatchewan Fire Fighters' Union, IAFF Local 5277 is in negotiations with the City of Fort Saskatchewan to establish their first CBA. Once the CBA is ratified, the wages and benefits for the Fort Saskatchewan Fire Fighters' Union, IAFF Local 5277 will be contained within the agreement. Most of the rates of pay are negotiated relative the first-class firefighter's hourly rate of pay. This negotiation, 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 CBA may address additional financial benefits including:

- A defined benefit pension plan
- Extended health, dental and vision care
- Drug and medical appliance benefit
- Life/disability insurance
- Long service recognition

Council Procedure (HUM-030-C) Fire Services Staff Compensation defines the compensation structure for Fire Service Opted Out and Excluded and Fire Service POC staff. This procedure includes:

- Base wage rate
- Percentage rate
- Compensation review
- Municipal comparators
- Temporary promotion
- Compensation upon demotion, position movement or compensation adjustment

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 should 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.

FSFD have been successful in their recruiting efforts in attracting qualified applicants for both career and POC firefighter positions.

A comprehensive process for recruiting POC and POC firefighters is established for fire suppression staff. Job postings including minimum requirements and process are listed on the city website.

The minimum qualifications for FSFD firefighters include:

- NFPA 1001 Level 1&2 certification
- CPR ‘C’ and AED
- NFPA 1072 HazMat Awareness

3.3.3 Selection and Training of Recruit Firefighters

FSFD has an extensive firefighter selection and training process. Candidates are required to have the minimum qualifications. The candidates must pass a firefighter written test based on IFSTA Essentials 7; pass the University of Alberta Candidate Physical Ability Test (CPAT); a fire department interview; followed by a full medical. Once the candidate is hired, they will operate in the 4th seat on the Squad for one on-shift tour for onboarding with the fire department systems/process.

3.3.4 Retention

Career full-time firefighters' retention is not an issue for the FSFD in fire suppression. The highest turnover typically exists in the POC firefighters. Full-time positions in the FSFD are highly sought after and valued. The city offers a competitive salary and benefit package. Occasionally, full-time employees may leave to pursue other opportunities, but this is a relatively infrequent occurrence. As stated above, full-time firefighter positions are typically filled by current POC firefighters, which adds to the availability of POC firefighters.

POC firefighters typically are seeking a career in the fire service, and while working in the capacity of POC, will usually be applying for full-time opportunities in other career fire departments. The constant turnover of trained firefighters' results in staffing shortages and increased costs of recruitment and training.

3.3.5 Promotions and Advancement

The promotional policy for administrative (non-unionized) staff positions are filled through a competitive process:

- Fire Chief - hired by the GM
- Deputy Fire Chief - hired by the fire chief
- AFCs– hired by the fire chief

3.4 Training

Training and competency development are essential and ongoing activities for all contemporary fire departments. A prepared and competent workforce reduces risk and safely optimizes service delivery. An effective workforce-training program aligns the growth and development of personnel to the organization's mission and goals.

Training and education program activities are identified by assessing the knowledge, skills, and abilities (KSA) needed for the firefighters to perform their duties as outlined in the department's SOGs and Procedures. Additionally, Alberta Occupational Health and Safety (AOHS) has increased the formal requirements for training and maintaining records of that training with compliance to 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.

Typical training and qualification programs include:

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

The task of identifying, delivering, and tracking all required training while balancing the operational readiness role 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 FSFD identified priorities.

The FSFD does not have a training division specifically mandated with the responsibility of the development and coordinated delivery of all necessary training for the FSFD personnel. This is a shared responsibility of an assistant fire chief and individual shift officers.

For training consistency and priorities, it would be advantageous to have a dedicated training officer within the FSFD and as such a deputy chief of training has been recommended. A training division would ensure a coordinated effort in training consistency and scheduling required for the safe and effective delivery of emergency services while also meeting Alberta firefighter OHS and WCB regulations for all FSFD staff.

Observation #9: FSFD conducts live fire training twice a year. Their commitment to staff to receive the appropriate live fire training is completed by renting the Spruce Grove Fire Department training tower which is over an hour drive from Fort Saskatchewan. Additionally, the reliance on outside agencies to provide the necessary live fire training has resulted in challenges to complete the required training. Furthermore, this approach requires the deployment of up to 12 firefighters and two engines out of the city's response area and depletes the FSFD response capabilities.

Recommendation #9: Conduct a feasibility analysis of building firefighter training facility.

(Suggested completion: 48-60 months)

Rationale: *A modern training facility including a local live fire training structure would provide reliable training opportunities that can be scheduled based exclusively on the needs of the FSFD. The ability to provide identified training needs within Fort Saskatchewan will provide cost efficiencies and increase the ability to provide on-shift training with minimal effect to response capabilities.*

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.

Further, 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 &1072 Hazardous materials
- NFPA 1001 Firefighter
- NFPA 1002 Pump Operator
- NPFA 1021 Fire Officer
- NFPA 1041 Instructor
- NFPA 1403 Standard on Live Fire Training Evolutions
- NFPA 1521 Incident Safety Officer
- NFPA 1031 Fire Inspector and Plan Examiner

- NFPA 1051 Wildland Firefighting
- NFPA 1033 Fire Investigator
- NFPA 1035 Fire and Life Safety Educator
- NFPA 1037 Fire Marshal

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 not be 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

FSFD staff are allocated $500.00 annually for wellness equipment and/or programs. They have annual medicals provided by the employer. Fitness assessments are utilized only to confirm fit for duty situations.

The mental health of first responders is an issue that has garnered considerable attention over the past 10 years. As identified in the 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.

FSFD staff have access to the Alberta Critical Incident Peer Network (ACIPN). The ACIPN is a peer led, and driven support network of public safety personnel for public safety personnel. Volunteers are trained in leading practices and deliver support in accordance with International Critical Incident Stress Foundation standards. This network provides support to all members of the FSFD for Critical Incident Stress Management. Department members take Critical Incident Stress Management training through this network to offer peer support the FSFD members along with supporting other first responders' throughput the Province of Alberta.

3.6 Policies, Procedures and Guidelines

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

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. SOPS, however, are formal policies that specify a firefighter's 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. All these documents must be appropriate for the situation, vetted, approved, and documented. 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: *FSFD is currently in the process of updating their current library of directives and SOG.*

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

FSFD utilizes the industry recognized Blue Card Command[7] 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 FSFD personnel are trained on this command system and utilized at all emergencies.

3.8 Core Services

As most modern fire departments, FSFD provides a broad range of services to the citizens of Fort Saskatchewan. Any services provided should align with the identified community risks and the needs of the citizens. Ongoing evaluation of community risks and fire department response capability is necessary to support ongoing emergency planning. Most citizens will not have the need to access fire department services. However, when emergencies occur, service expectations are high. Good planning processes are necessary to ensure citizens get the services they expect, and the community gets good value for their investment. Most of the core services are included in one of the National Fire Protection Association (NFPA) standards.

[7] *B Shifter - Blue Card*

The City of Fort Saskatchewan Council Policy SFA-015-C Fire Department Service Level[8] establishes the level of service FSFD provides the citizens. Council's fire department service level policy states, "…will strive to meet or exceed NFPA standards as outlined on Appendix 'A'; subject to budget approval." The policy supports recurring evaluation of community risks and fire department response capabilities necessary to support ongoing emergency planning every two years.

The following FSFD core services are detailed in Policy SFA-015-C (Appendix A):

Services	Training Level	Response
Firefighting Services		
Structural	- NFPA 1001 Level II Standard for Fire Fighter Professional Qualifications - NFPA 1002 Standard for Fire Apparatus Driver/Operator Professional Qualifications	- 2 pumps, rescue response, 15 staff, plus incident command Services. - Meet full deployment of above resources within 6 minutes of initial arriving apparatus 90% of the time.
Industrial	NFPA 1081 Standard for Industrial Fire Brigade Member Professional Qualifications Advanced Exterior	- 2 pump response, 10 staff plus - Incident Command Services.
Vehicle	As per Structural	2 Pump response, 10 staff plus Incident Command Services.
Wildland /Urban Interface	As per Structural	Brush truck, pump response, 10 staff plus incident command Services.

[8] *https://www.fortsask.ca/uploads/7/Doc_636758034206343703.pdf?ts=638029381028313660*

Services	Training Level	Response
Emergency Medical Services		
Medical Co-Response	Medical First Responder (MFR)	Alpha, Bravo, Charlie Delta Echo, and code acuity calls
Rescue Services		
Technical Rescue	- NFPA 1006 Standard for Technical Rescuer Professional Qualifications - NFPA 1670 Standard on Operations and Training for Technical Search and Rescue Incidents	
Motor Vehicle, Machinery	Operations Level	Rescue, pump response, 10 staff plus incident command Services.
Ice Rescue	Operations Level	Rescue, pump response, 10 staff plus incident command Services.
Surface Water Rescue	Operations Level	Boat, rescue response, 10 staff plus Incident Command Services.
Trench Rescue	Operations Level	Rescue, pump response, 10 staff plus incident command Services.
Confined Space Rescue	Operations Level	Rescue, pump response, 10 staff plus incident command Services.
Rope Rescue	Operations Level	Rescue, pump response, 10 staff plus incident command Services.
Elevator Rescue	Operations Level	Rescue, pump response, 10 staff plus incident Command Services.
Power Lines Down/Electrical Hazards	Operations Level	Rescue, pump response, 10 staff plus incident command Services.
Building Collapse	Operations Level	2 pump, rescue response, 15 staff plus incident command Services.

Services	Training Level	Response
Dangerous Goods Response		
Hazardous Materials Response	- NFPA 471 Recommended Practice for Responding to Hazardous Materials Incidents Operations Level - NFPA 472 Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents Operations Level	Rescue, pump response, 10 staff plus incident command Services
Inspection Services		
- Alberta Fire Code Compliance Construction Fire safety plan reviews - Occupancy loads - Evacuation plan reviews - New development reviews - Building Pre-Plans	- Safety Codes Officer Fire - Inspection discipline	As per Quality Management Plan
Investigation Services	- Safety Codes Officer Fire - Investigation discipline	- As per Quality Management Plan - All fires are Investigated for cause and origin.
Public Education Services		Public education programs are delivered upon request.
Training Services	- NFPA 1041 Standard for Fire Service Instructor Professional Qualifications - NFPA 1403 Standard on Live Fire Training Evolutions	Staff are appropriately trained, as per NFPA standards.

3.8.1 Structural Firefighting

Residential fires are a leading cause of fire-related death, injuries, and property loss in Canada. FSFD firefighters are trained and certified to the NFPA 1001 Level I and II Standard for Fire Fighter 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 tasks are completed.

Residential structure fires are a frequent type of structure fire encountered by FSFD. Available staffing and equipment should be adequate for firefighters to be able to safely perform the task expected of them. Based on the population density of the city that is served by the composite fire service delivery 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 with a basement.
- *NFPA 1720 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations and Special Operations to the Public by Volunteer Fire Departments* recommends a minimum of six firefighters to commence structural firefighting on a low-hazard structure in a rural setting, and four firefighters in remote settings.

It is noted that FSFD 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 FSFD staff survey and interview participants identified that the initial response (1st alarm) and reliance on call back of career and POC firefighters is inadequate to safely manage minor structural fire incidents. As previous discussed, FSFD has a minimum staff compliment of four fire suppression staff on-duty at the fire station. Confirmed structure fires require utilization of the automatic aid agreement from Strathcona County Emergency Services (SCES) along with FSFD POC firefighter callout to safely handle an interior attack and/or rescue.

3.8.2 Wildland Urban Interface

Wildland urban interface (WUI) fires are a risk that may range from low to extreme depending on the magnitude of the fire. Furthermore, large WUI events are typically active for extended periods and can quickly exhaust local resources. WUI fires are identified in the Council Policy SFA-015-C Fire Department Service Level as the same response level as structural firefighting services and provided to the NFPA 1051 standard.

FSFD fire suppression staff have additional support with respect to WUI fires through a mutual aid agreement with Alberta Forestry. In general, the department is well resourced to

manage smaller WUI fires. To manage a large WUI fire, FSFD would be required to rely on resources through the Capital Region Mutual Aid agreement and call back off-duty staff,

3.8.3 Medical First Response

Medical co-response is a valuable service provided by the FSFD to the MFR level. At more than 3300 responses in the past five years, medical co-response is the most frequent service provided by the FSFD. 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. FSFD is trained to provide medical aid of Basic Plus First Aid and Health Care Provider CPR recognized by Alberta Health Services. The department currently has limited responses for delta and echo priority emergencies, which are potentially or immediately life-threatening events. The automatic aid agreement with SCES provides additional response capabilities for this type of higher acuity calls.

It is important to note that this MFR was considered as a relative low-cost service that is valued by the community.

3.8.4 Motor Vehicle Collisions, Vehicle Extrication

MVC 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 of involving dangerous goods or requiring heavy equipment to manage.

FSFD is trained to NFPA 1001 and 1006 standard and well equipped to manage vehicle collision and extrication incidents. The service level policy identifies that the rescue pump response with 10 staff plus incident command are deployed to these events. The achievement of this response performance goal is discussed in Section 4. MVCs were the third most common incident over the five-year period within the city. Alberta Provincial Highway 15 runs through the City of Fort Saskatchewan. The highway has many commuters from Sturgeon County and Fort Saskatchewan. The Highway has a several fatal collisions over the years. Responses on the roadways within the city response area may present hazardous conditions for responders. However, the FSFD is well-trained and equipped to respond to these types of incidents when the need arises.

3.8.5 Hazardous Materials Response

Response to hazardous materials (hazmat) or dangerous goods 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 hazardous materials, 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 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.

Council Policy SFA-015-C fire department service level has identified that the FSFD responds to hazardous materials incidents at the operations level. While incidents involving hazardous materials are infrequent, these types of events can result 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 FSFD is provided at the operations level of service, the FSFD may require outside support 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.

FSFD through Council Policy SFA-015-C Fire Department Service Level establishes a considerable range of specialized technical services. The following are identified as FSFD services :

- Motor Vehicle, machinery rescue (services provided to the NFPA 1006 Standard)
- Ice rescue (services provided to the NFPA 1006 Standard)
- Surface water rescue (services provided to the NFPA 1006 Standard)
- Elevator rescue (services provided to NFPA 1001, Level II Standard)
- Power lines down/electrical hazards (services provided to NFPA 1001, Level II)
- Trench Rescue (operations level)
- Confined space rescue (operations level)
- Building collapse (operations level)
- Rope rescue operations level

Observation #10: The specialized technical services below are listed in the Council Policy SFA-015-C however, the FSFD are not currently equipped or trained to maintain these services:

- Technical Rope rescue (services provided to the NFPA 1006 Standard)
- Trench rescue (services provided to the NFPA 1006 Standard)
- Confined space rescue (services provided to the NFPA 1006 Standard)
- Building collapse (services provided to the NFPA 1006 Standard)

Recommendation #10: Update Council Policy SFA-015-C Fire Department Service levels to indicate the current services provided that FSFD are capable to provide (training, resources, and skill maintenance).

(Suggested completion: 1-6 months)

Rationale: *The policy must indicate the actual services to ensure FSFD staff and the citizens are aware of the services provided by the FSFD.*

3.8.7 Fire Prevention Services

As departments increase their emphasis on fire prevention activities, communities are seeing a significant reduction in fire-related losses. In Canada alone, deaths caused by fire have been reduced over the last 100 years from 3500 deaths per year to 330 each year. Although difficult to measure, effective fire prevention programs reduce fire-related deaths and property loss proportionately to the resources committed. Data collection and analysis will determine the effectiveness of these programs and their impact on the overall reduction of losses.

The City of Fort Saskatchewan is an accredited agency under the Alberta Safety Codes Act in the fire discipline. FSFD 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 component of risk management. Cyclical fire inspection programs for high-risk buildings ensure these systems continue to function throughout the life of the building. This is especially important for high occupancy and special purpose buildings such as apartment buildings, hospitals, seniors housing and schools.

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

As mentioned, FSFD does not have a dedicated fire prevention inspector to provide critical fire prevention services to the community, but rather place this responsibility to one of the Assistant Chiefs as a secondary function.

These services are fundamental elements of a broader community fire reduction and life-safety strategy. Fire inspections are critical services in identifying fire hazards and maintaining life-safety systems.

Observation #11: The GoA requires municipalities to regulate the development, construction, and fire protection requirements through the application of National Building and Fire Code of Canada, Alberta Editions. An inspection of all higher risk structures should be conducted and evaluated in terms of safety codes compliance, risk assessment, and public safety. As discussed, it is useful to develop and maintain a property risk profile to identify high-priority risks and develop risk management strategies.

Recommendation #11: Modify the City of Fort Saskatchewan Quality Management Plan to include a cyclical inspection program with the establishment of a fire prevention inspector.

(Suggested completion: 12-24 months)

***Rationale**: A mandatory inspection program increases public safety for high life risk assembly occupancies and high-risk properties such as industrial occupancies. In addition, a cyclical inspection program provides the mechanism to assess the impact of future growth and the changing risk profile of the community. This will aid in the long-term planning of response resources (personnel and equipment) and the developing of FSFD SOGs.*

3.8.7.2 New Developments Plan Reviews

Working with the city's planning and development services department, the fire chief or designate are involved in development and construction plans review. FSFD and the planning and development staff work together to review building and site plans to ensure the construction process complies with the fire code requirements.

3.8.7.3 Fire Cause and Origin Services

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

FSFD assistant fire chief on-shift is responsible for fire investigations. Arson fires or complex fire investigations are contracted out. All required reporting is completed and submitted to the GoA 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. The FSFD does not provide fire public education. Opportunities exist to deliver fire safety messaging as well as displaying the services that are provided by the fire department such as station tours and public appearances that are typical public education activities. FireSmart WUI programs are an important program that can be promoted in the areas of the city that have wildland interface risks. As previously identified the establishment of a fire prevention inspector would provide the capacity to deliver a public education program for fire and life safety.

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.

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

Observation #12: FSFD firefighters have conducted some pre-planning, typically 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. FSFD has access to the city's building inventory and can serve as the basis for a formal pre-emergency-plan process.

Recommendation #12: Establish a formalized pre-emergency plan inventory program.

(Suggested completion: 36-48 months)

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

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 frequent 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 FSFD response data, this response type occurs relatively frequently in the city. FSFD 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

Strathcona County provides 911 call answering as a Public Safety Answering Point (PSAP) and emergency fire dispatching services for Fort Saskatchewan. The service is provided through the Strathcona County 911 Call Answer and Dispatch Agreement.

Observation #13: The 9-1-1 Call Answer and Dispatch Services agreement dated 9 September 2016 is dated and does not include alarm processing or handling performance measures.

Recommendation #13: Complete an update of the 911 Call Answer and Dispatch Services agreement and include alarm answering, and processing performance measures as part of the revised agreement.

(Suggested completion: 12-24 months)

Rationale: *Performance benchmarks for PSAP are established in NFPA 1221 and 1710. Achieving the benchmark performers has a direct impact on fire department response capacity including emergency notification, turnout time and effective total response time. Municipal agreements should be updated on a recurring basis, and it is suggested every 5 years for this type of service agreement.*

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 City of Fort Saskatchewan's Emergency Advisory Committee, AEMA, Emergency Plan and Emergency Operations Centre has been developed under the authority of the City of Fort Saskatchewan Emergency Management Bylaw No. C11-19[9]. The plan enables a centralized controlled and coordinated response to emergencies in the city.

Fort Saskatchewan's Emergency Management Agency works with city departments and other organizations such as the NRCAER, Alberta Health Services, industry, utility companies, service organizations, Fort Saskatchewan Hospital, and the Fort Saskatchewan Corrections Centre to prepare for emergencies that may occur in the city. When a large-scale emergency occurs, the city will activate its Emergency Response Plan. The plan details the methods in which the city mobilizes its resources during a crisis. It also ensures all city organizations, emergency response services, and key agencies are fully aware of their respective roles and responsibilities.

[9] *https://www.fortsask.ca/Modules/Bylaws/Bylaw/Download/84cc6508-a5f4-4e88-8c72-e4d2b2d910bd*

Depending on the nature of the emergency, the city's emergency response will include some, if not all, of the following services:

- Opening an evacuation/reception centre
- Temporary accommodation, transportation, arrangements for food and clothing, and other personal supports
- Providing information and assistance with rehousing (if necessary) and coordinated updates to affected evacuees

During an emergency, City of Fort Saskatchewan will provide information using the following channels:

- Fort Sask Alert System
- UPDATEline: (24-hour phone line)
- Community Warning Sirens (3 in the city)
- NRCAER Signs (electronic sign strategically placed around the city)
- Alberta provincial emergency alert system

The fire chief is designated as the director of emergency management (DEM) and is responsible for the city emergency program. There are many heavy industrial facilities within the City of Fort Saskatchewan that require meetings and coordination with respect to emergency response preparedness (training and exercises), response, mitigation, and recovery. These facilities are obligated to have emergency response plans (ERP) that are required to be reviewed. The reviews are conducted by the city's DEM.

Observation #14: During the interview consultation process, it was identified that additional resources are required to enhance the city's emergency management. The management of this obligation requires a considerable amount of the fire chief's time. This includes coordination with industry members within Fort Saskatchewan and ERP reviews.

Recommendation #14: Establish a full-time dedicated Emergency Management position.

(Suggested completion: 12-24 months)

Rationale: *To efficiently and effectively manage the city's emergency management program a full-time DEM is required. The significant EM risk factors including the industrial component substantiates the need for this position. Further, this position would reduce the EM workload from the fire chief. The city DEM would become the single point of contact with respect to emergency management for both external partners and city-wide departments, industry ERP reviews, update emergency plans, contact lists, and be on-call in the event of an emergency incident response.*

Observation #15: There are several emergency management-related plans that need to be developed, updated, or enhanced. For example, this could include a formalized proper emergency social services plan, evacuation plan, and emergency donation management program.

Recommendation #15: Establish an external contract to have the various emergency management-related plans to be developed, updated, or enhanced.

(Suggested completion: 12-24 months)

Rationale: *These emergency management-related plans require a considerable amount of work to complete. A full-time DEM would be pre-disposed for 2-3 years to complete this requirement. An external contractor would provide the focused resources to complete these plans. Following this external contractor review the full-time DEM would be responsible for the ongoing review and updating on an annual basis*

3.10 Mutual Aid and Other Service Agreements

Large emergency events quickly overwhelm the response capacity of most municipal fire departments. This is especially true for smaller fire departments with limited resources. As a result, mutual aid and automatic aid agreements are a necessary component to increase response capacity for low frequencies but potentially high or extreme consequence events.

The City of Fort Saskatchewan maintains emergency automatic aid, fee for service and mutual aid agreements with the following communities:

- City of Edmonton
- City of Leduc
- City of St. Albert
- City of Spruce Grove
- Lamont County
- Leduc County
- Parkland County
- Strathcona County
- Sturgeon County
- Town of Beaumont
- Town of Bon Accord
- Town of Bruderheim
- Town of Calmar
- Town of Devon
- Town of Gibbons
- Town of Lamont
- Town of Legal
- Town of Morinville
- Town of Redwater
- Town of Stony Plain
- Town of Thorsby
- Town of Wabamun
- Village of Warburg

As FSFD has limited firefighting resources available on a full-time basis, a large-scale incident or concurrent emergency incidents could exhaust these resources. As examples, WUI fire and industrial fire are identified community risks that could easily consume all FSFD resources and would require additional resources to safely manage.

FSFD relies on formalized mutual aid agreements with neighbouring communities to supplement operational requirements where needed. These agreements whether fee for service, mutual or automatic clarify operational and financial commitments, as well as liability concerns. These agreements are an effective process to ensure timely and reliable response of required resources. FSFD also supports Sturgeon County with a fee for service reciprocal agreement for aerial fire apparatus response. In our opinion there is a disproportionate reliance on SCES for routine responses in the FSFD demand zone. As both communities continue to grow this reliance will become unsustainable. This issue is directly related to the ERF analysis at Section 4 of this FSMP. Options to address this operational response shortfall is provided.

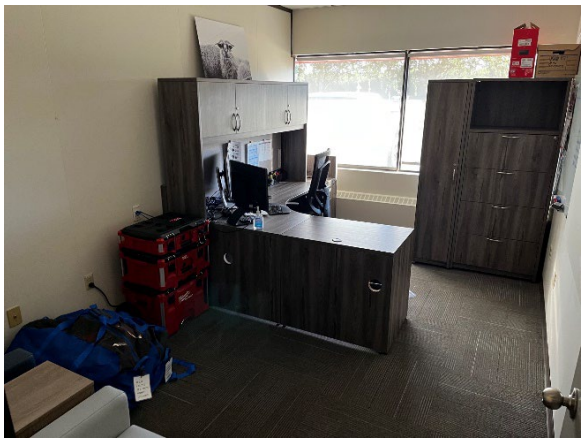
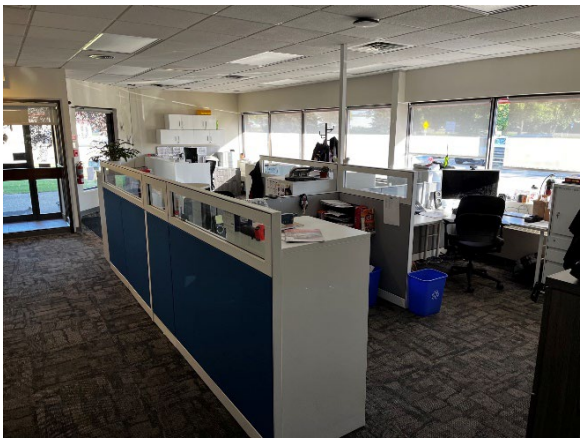
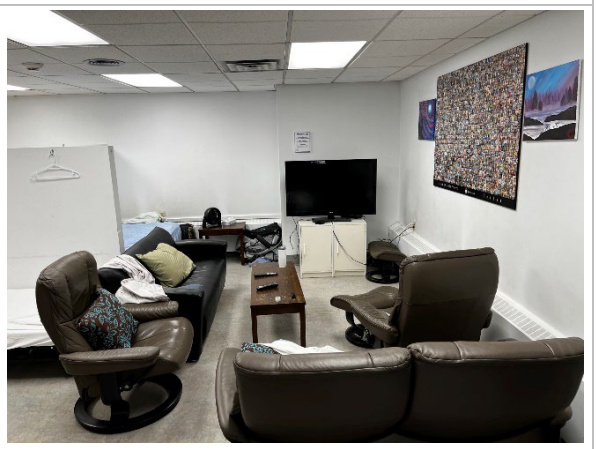
3.11 Facilities

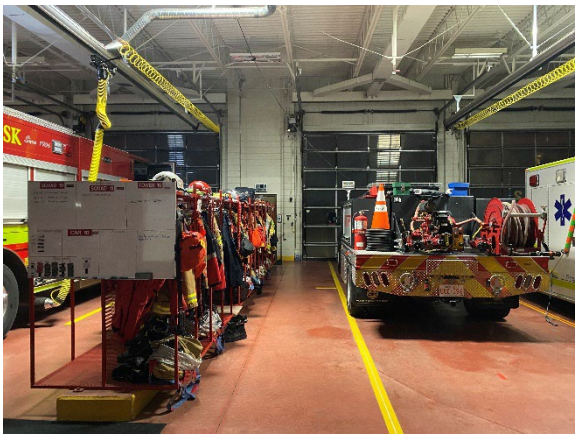
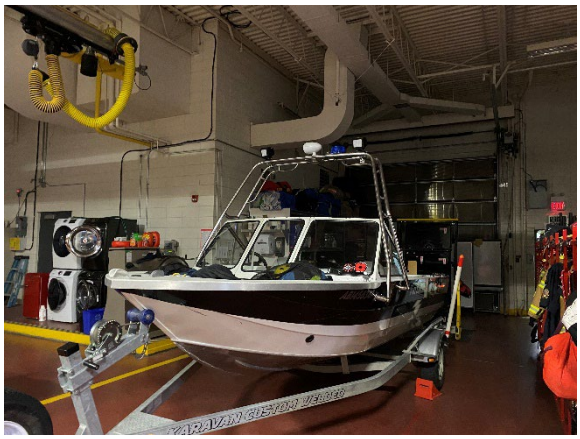
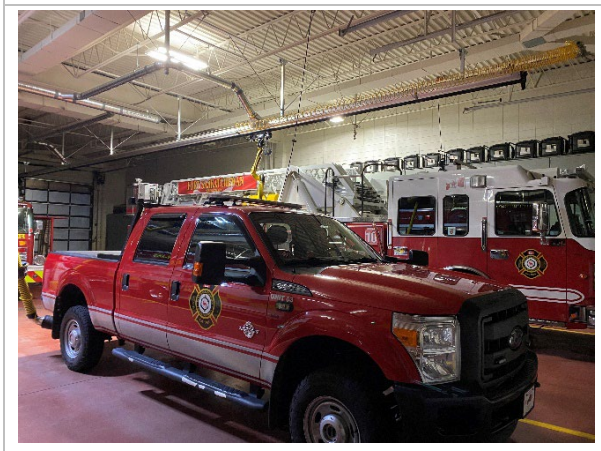
FSFD provides fire and emergency response from a single owned and operated fire station located in the southeastern part of the city. This location provides good access for response to Highway 15 to the north and east and Highway 21 with access to the south and west. Fire Station 1 serves as the FSFD headquarters and where all response personnel are located.

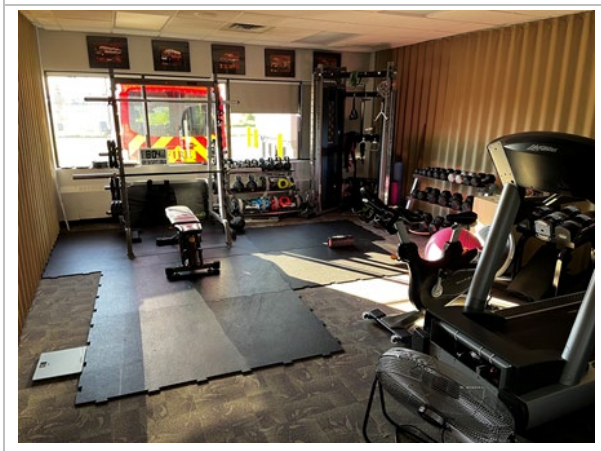
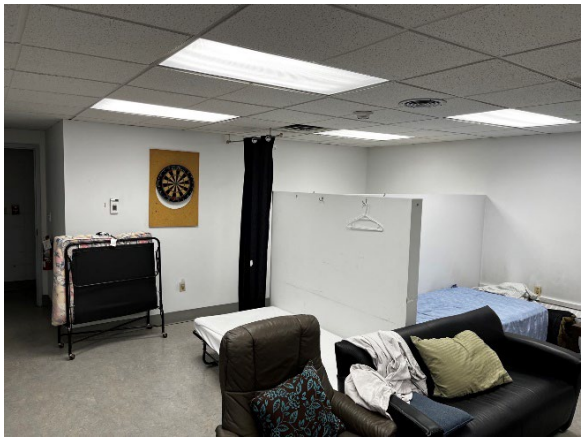
3.11.1 Fire Station Overview and Assessment

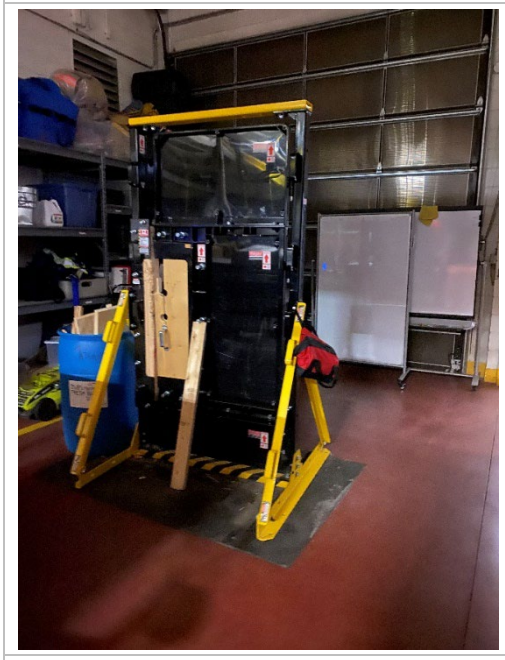
Note: *See Section 3.12.1 Apparatus and Light Duty Vehicles*

Station Name:	**Station 1 – Walter Thomas**		
Address:	10099 – 93 Avenue, Fort Saskatchewan		
Use:	Fire / Rescue and Emergency Medical Services		
Bays:	9 (3 drive through tandem and three single bay)	Unit Capacity:	10
Comments:	As the only station in Fort Saskatchewan, it serves as the hub for all apparatus, operations, and response personnel.		

Fire Chief's Office	*Deputy Fire Chief's Office*
	
Administration, AFCs and Captains Office	*Kitchen Area*
	
TV Room and Work Stations	*EMS Area*
	

Apparatus Bays	*Apparatus Bays*
	
Apparatus Bays	*Apparatus Bays*
	
Apparatus Bays	*Appparatus Bays*
	

Radio and Communications room	*SCBA Bottle Fill Station and Maintenance*
	
Personal Training Room	*Outside of Dorm Room*
	
Firefighters Dorm Room Area	*EMS Dorm Room Area*
	

Operations Training Area	*Training Area Classroom*
	
Outdoor Training Area	
	

3.11.1.1 Fire Station Assessment

Opened in 1983, Fire Station 1 has been the station for FSFD. It was designed and built with the goal of effectively meeting the needs of the fire service. With the recent annexation and development into the southwest areas of the city, the location of this fire hall is no longer centralized in the community and is unable to provide optimal geographical response within the desired time objectives. The limitations of area coverage are further demonstrated in Section 4 of this report.

Modern technology, including environmental enhancements and occupational safety measures, are in the forefront of this fire station. Some enhancements include features such as vehicle exhaust extractors, bunker gear and station wear storage,

washer/extractor, and dryers in a designated area near the apparatus floor. Further, this station was not built to accommodate full-time staff and as such change rooms, showers and washrooms need to be enhanced and include non-gender accessibility. Station 1, while approaching 40 years of in-service life, remains a functional fire station. Facility upgrades that are identified in this report will serve to enhance the further effectiveness and efficiencies of FSFD.

3.12 Equipment

3.12.1 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, FSFD 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 the replacement is needed.

Given the nature of emergency services and the reliance on safe and dependable equipment and vehicles, the need for regular and a critical review 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 reliably 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 the FSFD, 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 FSFD fleet including major apparatus and light duty vehicles is attached as Appendix F

3.12.1.1 Apparatus and Light Duty Vehicle Assessment

FSFD apparatus and light duty vehicles are well maintained with necessary repairs being done as required. The required Alberta commercial vehicle tests and certifications are completed by the city 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.

FSFD 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 that piece of equipment placed out of service until repaired.

Observation #16: Both newer squad pumpers have an ongoing issue with the foam delivery system. As the application of foam mixed with water through the fire hose is an effective fire suppression tactic, this issue needs to be corrected.

Recommendation #16: Determine with the manufacturer the deficiency with the foam systems and undertake corrective action.

(Suggested completion: 3-6 months)

Rationale: *The built-in foam delivery systems for each of these apparatuses are integral components of fire suppression tactics and must be made fully operational.*

Observation #17: There are areas within the FSFD response zone that are not connected to the water main system. FSFD is not equipped with a water tanker as part of the response fleet.

Recommendation #17: Develop a water servicing plan for areas without available fire hydrants.

(Suggested completion: 12-24 months)

Rationale: *The FUS provides 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.*

3.12.1.2 NFPA Standards for Fire Apparatus

NFPA has developed standards to assist a fire service with the design, maintenance, inspection, testing, life cycling and disposal for their fire apparatus. Fire departments may choose to adopt these standards or utilize them as a reference in their own 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 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[10] 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 7, some emergency vehicles life cycles can be extended due to low usage or serviceable condition. A leading practice is to have a complete condition survey conducted to determine if there is usable life cycle remaining. This condition survey must consider the NPFA and FUS standards along with the maintenance and cost records of the respective vehicle.

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 3.12.1.5, that FSFD amend the current life cycle replacement policy to comply with ULC, NFPA and FUS requirements.

[10] *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.*

3.12.1.3 Fire Apparatus Design and Procurement

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

FSFD response areas vary significantly in the risks and needs of each area. Fire apparatus and other response vehicles must be designed to meet these differing demands in protecting all areas. Feedback from firefighters indicated that historically minimal feedback has been solicited for apparatus design. 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.

The fire chief has assigned the apparatus and equipment portfolio to one of the assistant chiefs. This chief is responsible to discuss apparatus and equipment needs at scheduled captain meetings. Feedback is in turn brought to the scheduled chief meetings for discussion and action.

3.12.1.4 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 operates reliably in the way it was intended safely and effectively while assisting in making it to the anticipated 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 should consist of the flowing components:

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

FSFD apparatus and light vehicle maintenance, repair and commercial vehicle inspections are provided by the city Fleet Services Department, following recommended service schedules. Annual pump testing and certifications are managed through a third-party vendor.

Daily inspection sheets and post trip inspections are forwarded to Fleet Services staff to ensure any necessary repairs are made as soon as possible. Recommended service schedules, testing and certifications are coordinated with FSFD administration to ensure compliance with as little disruption to service as possible.

These processes require specialized training to perform these and other fire-related tasks. The industry recognized certification is an emergency vehicle technician. Many municipalities that have an established mechanical or fleet shop will upgrade one or more of their mechanical staff to the emergency vehicle technician (EVT) designation to provide efficiencies and cost saving.

Observation #18: FSFD relies on a 3rd party vendor to conduct the necessary pump tests, maintenance, and certifications on all pump capable apparatus and aerial devices.

Recommendation #18: Evaluate the feasibility of certifying one or more of the city's mechanics to the EVT level to repair and maintain FSFD's apparatus fleet.

(Suggested completion: 36-48 months)

Rationale: *Specialized levels of training and certification are necessary to test, repair and certify certain components of fire apparatus on a yearly basis. For FSFD, this requires bringing in specialized mechanics to perform these tasks and requires advanced planning, or subject to delays in necessary repairs for unforeseeable repairs. Having city fleet services train one or more of their staff to achieve this designation will improve efficiency and potential cost savings.*

3.12.1.5 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 2007 with a 25-year replacement timeline. Assumptions need to be determined for a particular piece of apparatus to

consider the type of factors above, as well as the type of requirements for the replacement apparatus to meet the needs for the next 20 plus years. Annual reserve contributions should be made to ensure sufficient funds are available at the time of anticipated replacement.

Table 6: Fire Apparatus Life Cycle Cost Projection Example

Vehicle	Year	Replacement cost based on 6.5% increase per year	Difference between original and replacement	Depreciated value
1	2007	$240,000.00	$0.00	$240,000.00
2	2008	$255,840.00	$15,840.00	$223,200.00
3	2009	$272,725.44	$32,725.44	$207,576.00
4	2010	$290,725.32	$50,725.32	$193,045.68
5	2011	$309,913.19	$69,913.19	$179,532.48
6	2012	$330,367.46	$90,367.46	$166,965.21
7	2013	$352,171.71	$112,171.71	$155,277.64
8	2014	$375,415.05	$135,415.05	$144,408.21
9	2015	$400,192.44	$160,192.44	$134,299.63
10	2016	$426,605.14	$186,605.14	$124,898.66
11	2017	$454,761.08	$214,761.08	$116,155.75
12	2018	$484,775.31	$244,775.31	$108,024.85
13	2019	$516,770.48	$276,770.48	$100,463.11
14	2020	$550,877.33	$310,877.33	$93,430.69
15	2021	$587,235.24	$347,235.24	$86,890.55
16	2022	$625,992.76	$385,992.76	$69,512.44
17	2023	$667,308.28	$427,308.28	$55,609.95
18	2024	$711,350.63	$471,350.63	$44,487.96
19	2025	$758,299.77	$518,299.77	$35,590.37
20	2026	$808,347.56	$568,347.56	$28,472.29
21	2027	$861,698.50	$621,698.50	$22,777.84
22	2028	$918,570.60	$678,570.60	$18,222.27
23	2029	$979,196.26	$739,196.26	$14,577.81
24	2030	$1,043,823.21	$803,823.21	$11,662.25
25	2031	$1,112,715.54	$872,715.54	$9,329.80
26	2032	$1,186,154.77	$946,154.77	$7,463.84

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

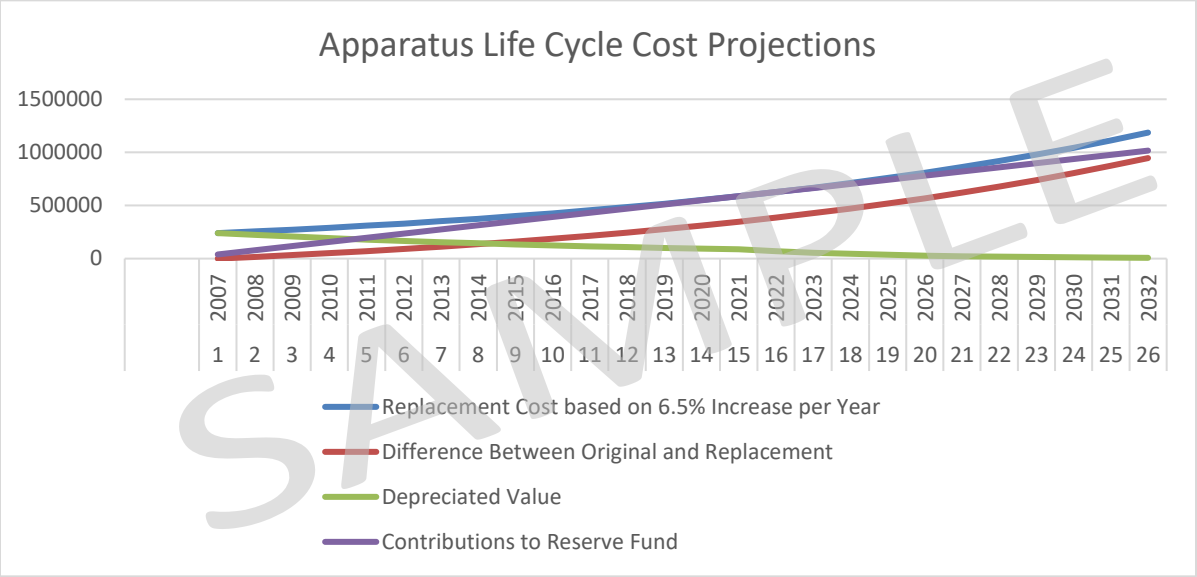


Table 6 and Figure 5 show that the monies put into the replacement reserve fund is close to the projected replacement cost in year 15 and requires additional contributions to extend past. Note the following key points:

- Five-year increase to replacement cost from 15-20 years = $182,533
- Five-year decrease in depreciation value from 15-20 years = $58,415
- Total increased costs to retain apparatus for additional 5 years (15-20) = $240,948
- Additional contributions to reserve fund $195,500
- Difference between 15 and 20 years is $240,948 - $195,500 =$45,448 or an additional $9,090 of contribution per year
- Changing from 15 to 20-year replacement cycle requires $1,818 per year more

FSFD 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 fleet services and finance, a standard fleet replacement schedule has been developed (see Table 7). Annual contributions are put into a reserve fund for the anticipated apparatus, equipment, and PPE replacement needs. The current practice is to annually review all FSFD vehicles together with fleet services and finance taking into consideration:

- Historical Apparatus Usage,
- Maintenance And Certification Records,
- Mileage and annual condition survey

Additionally, the following assumptions that form the criteria for replacement should include:

- The original purchased price
- Expected useful life
- Inflationary factor
- Replacement apparatus specifications
- Replacement apparatus cost
- Salvage value

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

No.	Unit Location	Unit Number/Name	Year	Estimated life expectancy (yrs.)	Estimated year replacement
1	Station 1	160-S1 Squad	2020	20	2040
2	Station 1	160-S2 Squad	2020	20	2040
3	Station 1	160-L1 Ladder	2008	20	2028
4	Station 1	160-P9 Pumper	2002	20	2022
5	Station 1	160-2, Car10	2015	10	2025
6	Station 1	160-1, Car 11	2015	7-10	2023-2025
7	Station 1	160-3, Bush	2015	7-10	2023-2025
8	Station 1	160-BT, Boat	2008	N/A	N/A
9	Station 1	160-4, Van	2019	7-10	2027-2029
10	Station 1	EM Trailer	2016	N/A	N/A
11	Station 1	Bickle Trailer	2010	N/A	N/A
12	Station 1	Ford Bickle Antique	1929	N/A	N/A

1st line- career staffed, 2nd line – call back and/or POC. No apparatus designated as reserve, as per NFPA.

Observation #19: Although FSFD has an established fire apparatus and vehicle replacement plan, FSFD lifecycles for their first line heavy apparatus is not consistent with lifecycles recommended by NFPA 1901 and the FUS body reporting to the Canadian General Insurance (CGI). As detailed in Table 7, first line apparatus is to be utilized for up to 15 years and then serve as a backup, or in reserve capacity for up to five additional years. The current deployment protocol identifies Squad 10, Squad 11, and tower 10 as first line apparatus that should adjust their first line life cycles to 15 years.

Recommendation #19: Amend the existing life cycles for first line heavy apparatus to 15 years of first line and five years in reserve including adequate contributions to capital reserves.

(Suggested completion: 24-60 months)

Rationale: *Adjusting the first line heavy apparatus replacement timelines to 15 years followed by 5 years in reserve will bring the FSFD vehicle fleet in compliance with NFPA and ULC requirements. Further to the NFPA and ULC requirements, it is advantageous to annually review and update the expected life cycles for all apparatus and vehicle including replacement funding estimates to ensure that there is the necessary complement of safe and dependable apparatus and other emergency vehicles.*

3.13 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 FSFD. Ancillary equipment should be designed and maintained to meet the department's current core service, goals, and objectives. FSFD current inventory of ancillary equipment is appropriate for the services provided except for some rescue services previously identified. 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.

3.14 Personal Protective Equipment

FSFD 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 gets 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 care and maintenance of these important pieces of protective gear.

The importance of properly cleaning and maintaining each firefighters PPE cannot be overstated. The hazards of off-gassing and absorption of contaminates is a significant health hazard for the 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 to 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 FSFD firefighters is appropriate and designed to meet the department's safety goals and objective. There is an established tracking system to monitor initial issue date, repairs, cleanings, and replacements.

3.14.1 Self-Contained Breathing Apparatus

SCBA are essential pieces of firefighting equipment that allows 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.

It is essential that all components of the SCBA is 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.

There appears to be enough SCBA to conduct 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. FSFD has their own certified SCBA air bottle filling station at the station for filling their air bottles as necessary.

FSFD has established a life cycle for the air pack and components that is included in their capital reserve budget.

Observation #20: FSFD SCBA inventory appears to be sufficient for normal operations. Funds have been allocated in the FSFD capital replacement fund for SCBA and air bottle replacement in 2025.

Recommendation #20: *Maintain sufficient SCBA and air bottles to accommodate all FSFD firefighters.*

(Suggested completion: 24-36 months)

Rationale: *Establishing and maintaining a sufficient inventory of SCBA and air bottles to allow every FSFD firefighter the opportunity to utilize this critical component of firefighter safety when required.*

3.15 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. FSFD 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 and rescue for the immediate response, specialized equipment is kept on the apparatus or in-station in anticipation of the known risks in each response zone.

As stated earlier, an assistant chief is assigned a portfolio that includes the equipment needs of the service. Equipment needs and issues are discussed at captain meetings. Concerns and recommendations are then carried up through to the fire chief and discussed at the regular chief meetings.

3.15.1 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 accidents 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.

3.15.2 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 of foot, in some cases under extreme terrain and conditions.

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

3.15.3 Water Rescue

FSFD has a capable rescue boat that serves the anticipated needs for water rescue. Supplemental equipment such as life preservers, poles and ropes are carried or otherwise available for water rescue.

3.15.4 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. FSFD has the necessary training and equipment to respond to this type of incident.

3.15.5 Dangerous Goods Response

FSFD is trained and equipped to manage a dangerous goods incident 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. FSFD maintains enough equipment for minor dangerous good incidents. Larger incidents would require additional resources through automatic or mutual aid agreements that are currently in place.

3.15.6 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 safely and effectively provide the level of service that is within their defined scope of duties is what should be considered the minimum.

FSFD has a broad range of expectations defined within their scope of work. The equipment that is 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 to request any equipment needs through the appropriate budget process.

FSFD has necessary equipment and training to provide low-angle rescues safely and effectively.

3.16 Asset Management

In some municipalities, the municipal corporation manages fire and emergency services assets to take advantage of synergies with other fleet and facilities management programs. In the case of FSFD, they utilize several fire department-specific records management programs that has served them well:

- Fire Pro2: personnel records and incident reporting and fire prevention records
- Aladtec: scheduling
- Target Solutions: training and skills maintenance records, directives, SOG's and notices, and Alberta College of Paramedics education records
- Halligan: Apparatus and equipment check record

3.17 Municipal Comparative Analysis

Comparing the FSFD to that of similar sized municipalities are a good way to identify relative service levels, costs, and trends. It must be noted that all communities have different attributes such as risk factors, historical decisions, service levels, geography, response types and community profiles. For this reason, the comparative community analysis should be used as a base reference, not a suggestion or intention of something to be replicated in Fort Saskatchewan. These benchmarks include department type, budgets, service areas, service levels, and staffing levels.

For the purposes of this municipal comparator review, we used 2017-2022 (Q2) information to obtain common information from each community. 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 FSFD. Our 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)
City of Fort Saskatchewan	27,088	48.12 km^2	57.8 km^2
City of Lloydminster	31,582	42.04 km^2	42.04 km^2
Town of Okotoks	30,405	39.04 km^2	374 km^2
Town of Stony Plain	18,762	36.86 km^2	590 km^2
City of Leduc *	33,032	43.0 km^2	TBD
City of Airdrie	76,500	84.57 km^2	Same + QEII
Town of High River	14,320	22.19 km^2	360.23 km^2
City of Chestermere	22,370	32.94 km^2	Mutual Aid w/ CRV
Town of Cochrane	32,199	31.58 km2	Mutual Aid w/CRV
* City of Leduc also operates ALS EMS services under contract to Alberta Health Services			

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.

Table 9: Community Comparative Departments' Profile

Community	Department Type	Union	No. of Stations	Total Staff	Fire Chief (FT)	Deputy Chief	Support Staff (FT)	Suppression Staff	Fire Prevention	Training Staff	Dispatch	Mechanical (FT)	Other
City of Fort Saskatchewan	Composite	Yes	1	46	1	1	1	16 FT 12 union FT 2 POC equivalent, 4 AFCs non-union 28 POC	0	0	0	0	0
City of Lloydminster	Composite	Yes	2	52	1	1	1	40 PT, 8 FT	0	1	0	0	0
Town of Okotoks	FT (Casual back up)	Yes	2	32	1	2	1.25	32 FT, 20 Casual	0	0	0	0	0
Town of Stony Plain	Composite	No	1	48	1 FT	1DC	.5	40 CS/POC, 5 FT	0	0	0	0	0
City of Leduc	Composite	Yes	2	87	1FT	3FT	2	36 FT, 36 PT	3	2 PT	N/A	1	1
City of Airdrie	FT	Yes	3	74	1 FT	2 DC 1 ADC	3 FT	64 FT	3 FT	N/A	N/A	N/A	1 Business Analyst
Town of High River	Composite	Yes	1	47	1	1	1	10 FT, 33 PT	1 PT	0	0	0	0
City of Chestermere	FT	Yes	1	29	1 FT	1 FT	2	24 FT	0	1 FT	0	0	0
Town of Cochrane	Composite	Yes	1	49	1	1	1	24FT, 20 Casual	2	0	0	0	0

FT: Full-time *PT: Part-time* *POC: Paid-On-Call*

3.17.2 Budgets

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

Table 10: Community Comparative Budget Ranking

Community	Municipal Budget 2022	Emergency Services Operating Budget (Net of revenue)	Percentage of Municipal Budget	Net Cost Per Capita
City of Fort Saskatchewan	$82,300,000	$4,036,597	4.90	$149.02
City of Lloydminster	$110,915,925	$4,596,242	4.00	$ 145.53
Town of Okotoks	$61,300,000	$5,000,000	8.15	$164.45
Town of Stony Plain	$36,012,050	$1,393,003	3.80	$74.25
City of Leduc	107,055,142	$7,572,541	7.07	$229.25
City of Airdrie	$173,878,950	$15,250,150	8.77	$199.34
Town of High River	$35,000,000	$2,569,050	7.34	$179.40
City of Chestermere	$49,700,000	$3,500,000	7.04	$156.46
Town of Cochrane	$60,420,371	$6,556,160	10.85	$203.61
Fort Saskatchewan Per Capita Net Expenditure Fire: $149.20				
Mean/Average Per Capita Net Expenditure Fire: $166.81				
Median Per Capita Net Expenditure Fire: $164.45				

All nine surveyed fire services have operating budgets within the range of $1.3M to $15.2M annually. FSFD consumes the seventh lowest percentage of the municipal budget of all the fire services surveyed at 4.9%. The percentage of the municipal budget for all fire services range from 3.8% to 10.85%. FSFD is below the median and the mean of the sample with regards to operating budget and the cost per capita of these departments. Based upon our experience, it is our opinion that the FSFD operating budget and cost per capita is within the lower range of similarly staff fire services.

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?
City of Fort Saskatchewan	Policy SAF-015-C	Revised July 2019 R142-19	partially
City of Lloydminster	Yes	Yes	partially
Town of Okotoks	Yes	Yes	partially
Stony Plain Fire Dept.	No	N/A	N/A
City of Leduc	No	N/A	N/A
City of Airdrie	Yes	Yes	partially
Town of High River	Yes	Yes	Partially
City of Chestermere	No	N/A	N/A
Town of Cochrane	N/A	N/A	N/A

3.17.4 Response Data

For the purposes of this municipal comparator analysis, we used 2017–2022 (end Q2) information to get common information from each community. Breakdowns are divided into the two following 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 MVC	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

Community		Fort Saskatchewan	Lloydminster	Okotoks	Stony Plain	Leduc	Airdrie	High River	Chestermere	Cochrane
Total Call Volume	2017	407	351	1085	568	1149	1661	834	911	1072
	2018	396	416	1083	558	1515	1852	832	947	1117
	2019	664	558	1056	639	2094	1882	792	828	966
	2020	699	642	1016	602	1743	1872	795	718	914
	2021	788	783	1120	633	2445	2019	921	1047	1014
	2022 (Q2)	478	445	831	143 (Q1) *	1331	1100	421	558	NA
Fire-Related Calls	2017	326	351	597	488	568	729	320	400	635
	2018	299	410	595	474	517	958	297	384	621
	2019	374	519	598	527	581	926	295	313	529
	2020	380	593	597	513	587	983	317	321	552
	2021	394	675	626	542	657	1044	362	367	668
	2022 (Q2)	236	384	587	107 (Q1) *	568	548	141	170	NA
EMS Related Calls	2017	79	0	488	80	449	932	514	511	437
	2018	97	6	532	84	749	894	535	563	496
	2019	290	39	458	112	1051	956	497	515	437
	2020	319	49	419	89	713	889	478	397	362
	2021	396	108	495	91	1126	975	559	680	346
	2022 (Q2)	242	61	244	36 (Q1) *	823	552	280	388	NA

There is no standard for categorizing incidents so it must be understood that these statistics are broadly based and are only for general reference when comparing fire departments.

The community comparative analysis can only be interpreted from an indirect basic level due the disparity from each of the surveyed communities' organizational structure, core services and levels, emergency response categorization, and financial systems. Direct comparison is strongly discouraged.

SECTION 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 the City of Fort Saskatchewan.

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. Additionally, a summary of Fort Saskatchewan City Council Policy SAF-015-C, Fire Department Service Level.

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 follow the 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 practice. It states:

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

- *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 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. The detailed description of the OHS requirements are outlined in this document to 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 of Canada Code – 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 Agency 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 composite fire departments such as the FSFD which utilize a staffing model including both career and POC firefighters. The two standards addressing fire department operational performance and service levels are NFPA Standard 1710: Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments and NFPA 1720: Standard for the Organization and Deployment of Fire Suppression Operations Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments.

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. Both standards are referenced in Section 4 in greater detail.

4.1.4 Fort Saskatchewan City Council Policy SAF-015-C, Fire Department Service Level

Policy SAF-015-C, Fire Department Service Level was issued on December 13, 2011, and revised on July 9, 2019 – R142-19. The current revision identifies the following emergency response goals:

1. *A fire engine with three first responders shall be on scene within 10 minutes, 90% of the time.*
2. *A supervisor in a command vehicle shall be on scene at all high risk, complex or technical emergencies within 10 minutes, 90% of the time.*

Structural Firefighting

1. *2 pumps, rescue response, 15 staff, plus incident command services*
2. *Meet full deployment of above resources within 6 minutes of initial arriving apparatus 90% of the time.*

The level of compliance with these response standards will be assessed in Section 4.3 Emergency Response Performance.

4.2 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 the public safety services.

Incident type 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 Types provides an overview of broad incident categories. This information is useful in quantifying general community risks and fire department activity.

Table 14: Incident Types (2017-2021)

Incident Type	2017	2018	2019	2020	2021	Total
Medical	76	95	287	319	396	1173
Alarms	152	117	197	209	204	879
MVC	71	62	67	44	50	294
Fire	41	57	50	57	63	268
Public Service	15	25	26	36	39	141
Dangerous Goods/HAZMAT	16	17	20	24	21	98
Rescue	4	8	3	4	8	27
Total	375	381	650	693	781	2880

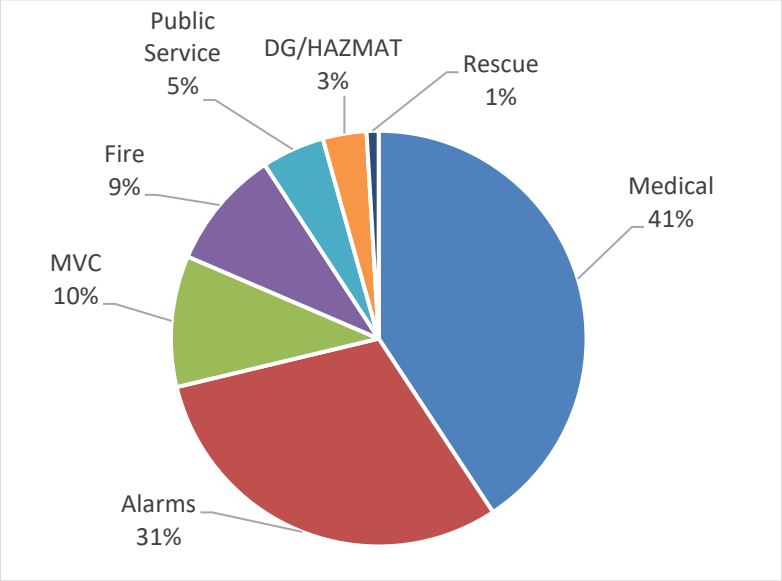
Note: *Full-time started in 2020*

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
- MVCs and fire-related incidents occurred with approximately the same frequency over this period
- Dangerous goods incidents were infrequent
- Rescue related incidents were less frequent but continued to occur every year during this period

Chart 1. Incident Frequency by Percentage provides a five-year aggregated analysis of the broad incident categories.

Chart 1: Incident Frequency by Percentage (2017-2021)

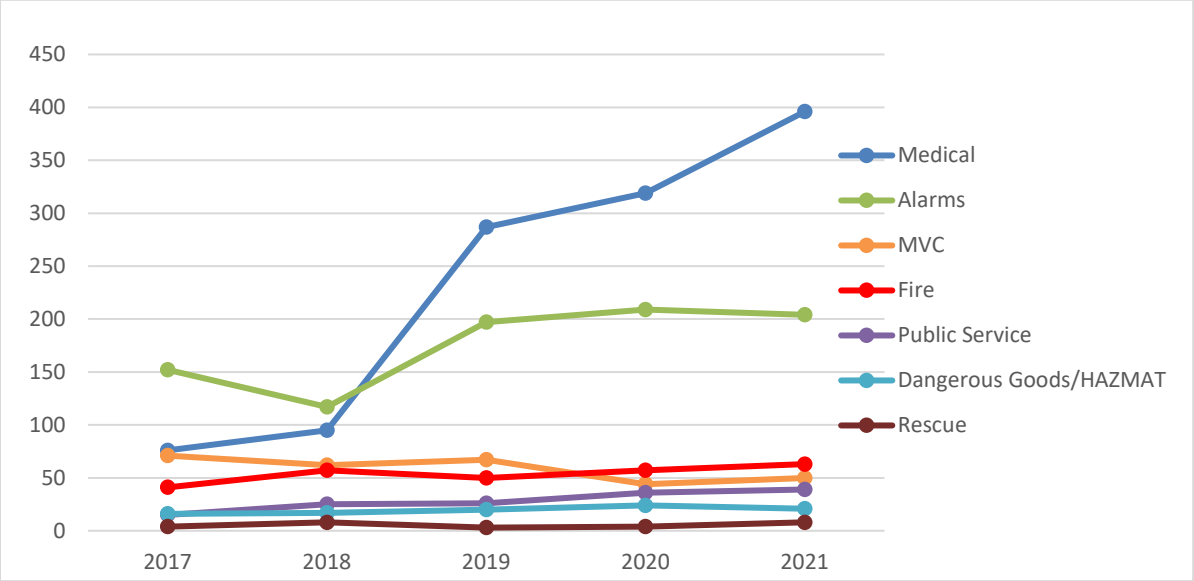


The following key observation regarding incident types from 2017-2022 were noted:

- Medical incidents, MVCs and fire-related incidents were the most common risks managed with a fire department response during this period

Chart 2. General Incident Trends identifies which incident types were increasing (trending upward), decreasing (trending downward) or unchanged (flat trendline). 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 increased by 316% from 2018 to 2021.
    - This increase is a result of the increased service level provided by FSFD following their transition to include fulltime fire department staffing.
- Alarm incidents increased by 68% in 2019.
- All other categories of incidents were unchanged during this period.

Table 15. Incident Subcategories expands the broader incident types into subcategories. The colour coding in Chart 2. General Incident Trends identifies the expanded subcategories of incident types. This information provides greater detail into specific types of incident categories. For example, fire-related incidents (in red) are categorized as structure, vehicle, and outside fires, as well as smoke investigation. This information is useful in quantifying specific community risks.

Table 15: Incident Subcategories

Incident Type	2017	2018	2019	2020	2021	Total
Medical	76	95	287	319	396	1173
Alarms	152	117	197	209	204	879
Motor Vehicle Collision	71	62	67	44	50	294
Outside Fire	11	29	18	26	30	114
Structure Fire	21	20	27	20	20	108
Vehicle Fire	4	8	3	3	2	20
Smoke Investigation	5	0	2	8	11	26
Mutual Aid/Assist Agency	3	1	12	9	10	35
Citizen Assist/Service Call	6	18	12	21	22	79
Misc.	0	0	0	1	0	1
Electrical Hazard	6	6	2	5	7	26
Gas Leak/Odour	10	9	11	12	11	53
Fuel Spill	2	4	5	3	3	17
Odour	1	3	3	6	6	19
Hazmat	3	1	1	3	1	9
Water Rescue	1	1	1	1	2	6
Watercraft in Distress	1	1	0	0	1	3
Extrications/Entrapped	2	6	2	3	3	16
High Angle Rescue	0	0	0	0	2	2
Total	375	381	650	693	781	2880

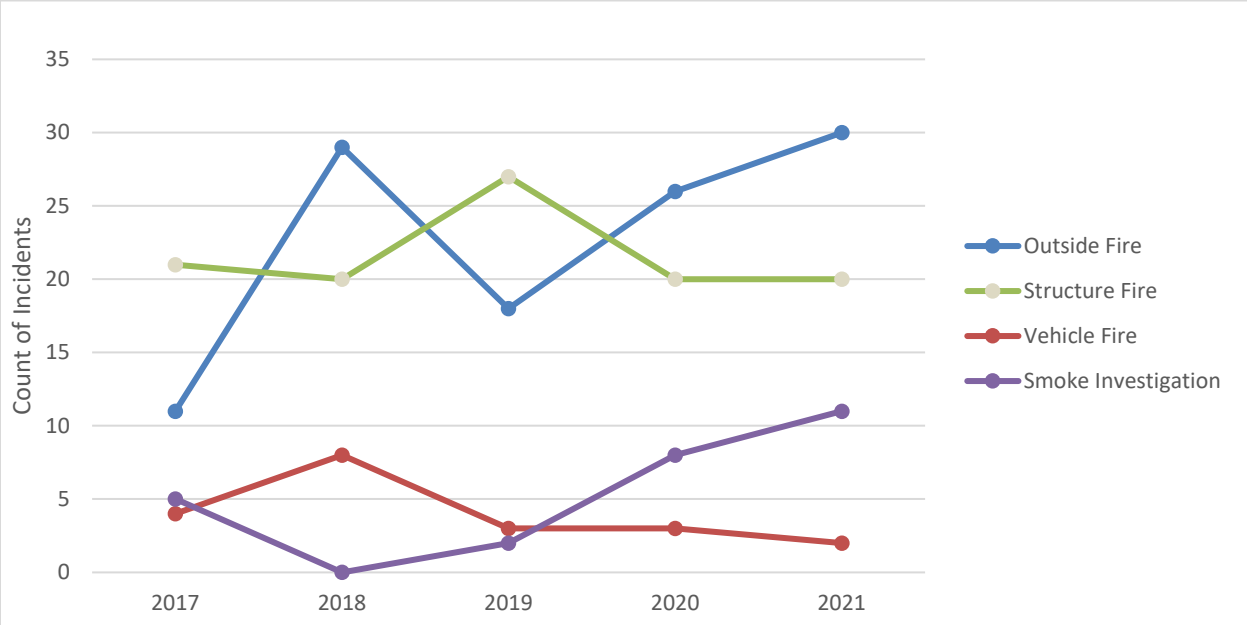
The following key observations regarding incident subcategories were noted:

- Structure fires and outside fires were the most frequent fire-related risks in the community.
- Citizen assist incidents were the most frequent public service incident type.
- Gas leak or gas odour was most frequent dangerous goods/HAZMAT incident type
- Extrications/entrapment incidents were the most frequent rescue incidents.

Municipal fire departments were implemented in the 19th and 20th centuries to manage large fire conflagrations which had the potential to raise entire communities. Modern building codes and fire inspection programs have reduced the community risk that 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. Further, fire incidents typically require a prompt response from a larger number of firefighters and apparatus to manage safely. Therefore, fire incidents warrant specific consideration throughout this FSMP.

Chart 3. Fire Incident Trends provides detailed review of the five-year trends in specific types of FSFD fire incidents.

Chart 3: Fire Incident Trends

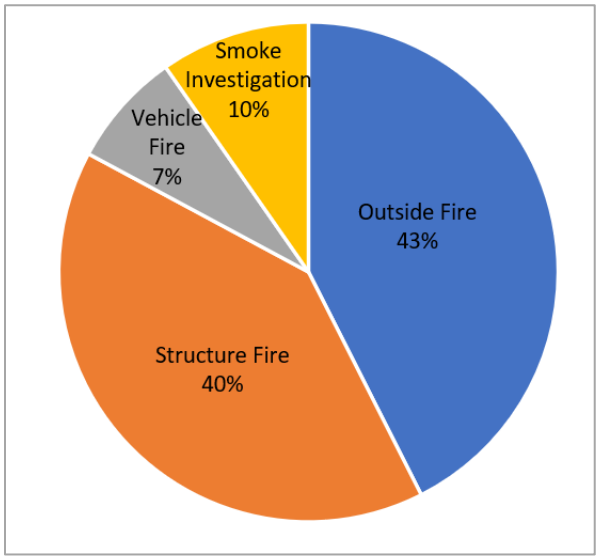


The following key observations regarding fire-related incidents were noted:

- Outside fires and smoke investigations trended upward in 2020 and 2021
- Structure fires and vehicle fires remained relatively unchanged throughout this period

Chart 4. 2017-2021 Fire Incident Type by Percentage identifies the frequency each incident category as a percentage for this period.

Chart 4: Fire Incident Type by Percentage (2017-2021)



The following key observation regarding fire-related incidents in this five-year period was noted:

- Outside fires and structure fires were the most frequent fire-related incidents

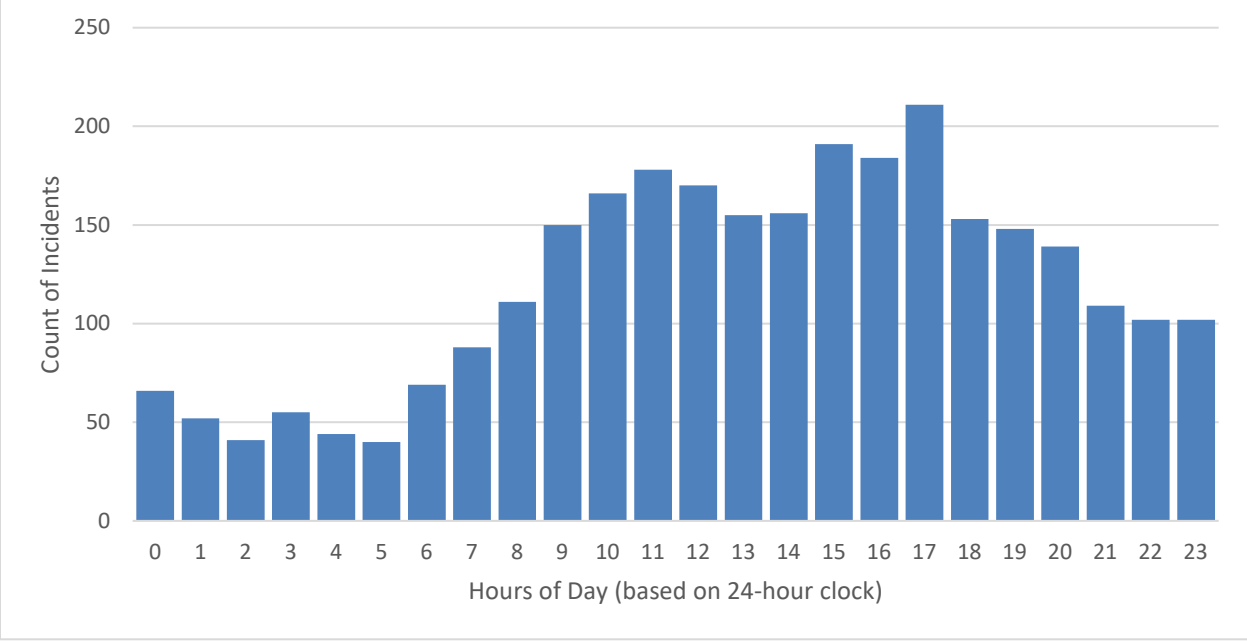
Table 16. Fire Incident Types by Demand Zone identifies the number and location of fire-related incidents FSFD responded to within the city boundary and outside of the city. Only the emergency in-city structure fire incidents were used to assess compliance with the fire department service level council policy.

Table 16: Fire Incident Types by Demand Zone (2017-2021)

Fire Incident Type	In City	Outside City	Unknown	Total
Outside Fire	105	6	3	114
Structure Fire	101	6	1	108
Vehicle Fire	19	1	0	20
Smoke Investigation	24	0	2	26
Total	249	13	6	268

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

Chart 5: Incidents by Time of Day (2017-2021)

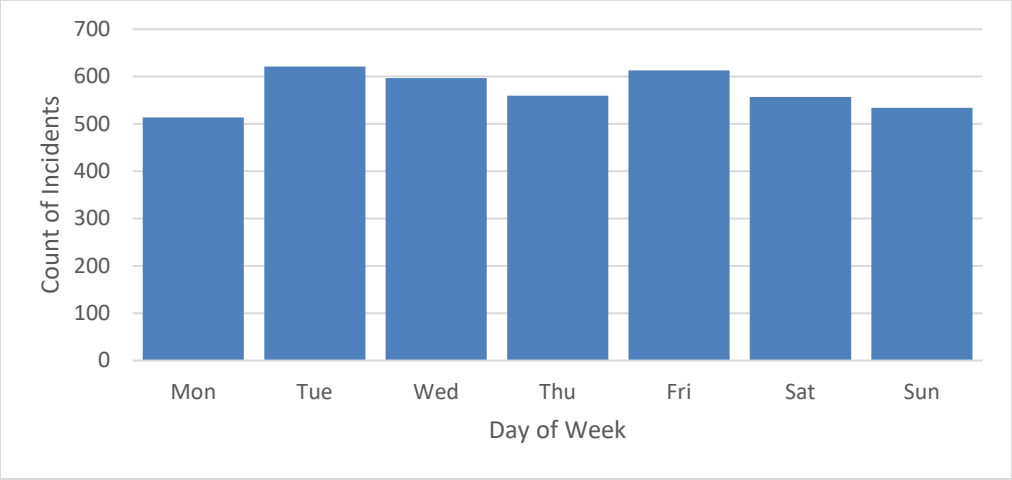


The following key observation regarding the time-of-day incidents occurred were noted:

- Two peak periods of demand were noted – between 10 am and 1 pm, and then 3 pm and 6 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 6 am is the lowest period of demand for services.

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

Chart 6: Incidents by Day of Week (2017-2021)



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

- In general, there was only a modest variation in demand for services by day of week
- Mondays were the lowest (n=514) and Tuesdays the highest (n=621) days of the week during this five-year period

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 FSFD response performance to emergency incidents within Fort Saskatchewan.

4.3.1 Intervention Time

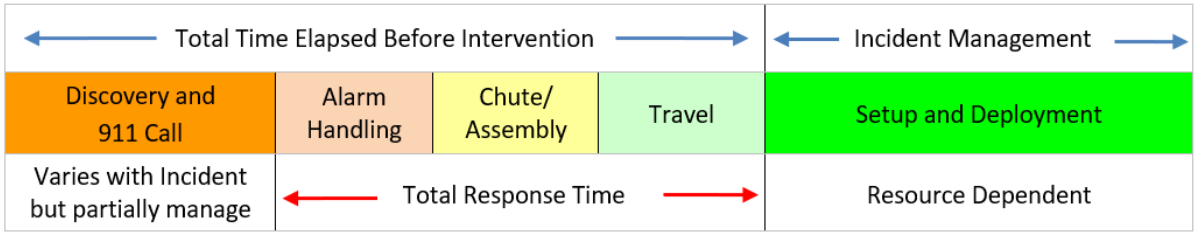
Total intervention time is the elapsed time between the incident occurring and the time incident management begins. The discovery of the incident and initiation of the emergency response system, typically by calling 911. From a community perspective, the time to discover a fire is partially manageable 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 times taken to get relevant caller and incident information (call handling time), notify first responders and have them prepare to respond (assembly time), and drive to the incident (travel time) are all critical elements of an effective response. These processes are the focus of this section and are the key indicators of total response time performance.

Incident management time is variable and depends on the type of incident and the resources required to safely manage it. Fire department resource availability is determined by the concentration (how many and what types of resources there are in one station) and distribution (where are those resources located relative to the incident) of fire department equipment and firefighters. Resource requirements are based on community risks. An adequately resourced response system should provide an effective response force (ERF) to safely manage commonly known risks as effectively and efficiently as possible.

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

Figure 6: Response Time Continuum



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

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

Alarm Handling: This is the time segment 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).

Chute Time: This is the time segment begins when dispatch notifies the firefighters until the response vehicle leaves the station for 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 provide delays on scene. A well-trained crew can minimize these delays while providing a safe, successful response.

4.3.2 NFPA 1710 and FSFD Performance Standards

NFPA 1710 standards apply to the career staffed fire stations. Table 17 NFPA 1710 Performance Standards identifies the response goals in this standard. Time standards are identified for alarm handling (alarm answering plus alarm processing times), turnout (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 17 provides a comparison between NFPA 1710 standards and FSFD 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 chute and travel times for 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 35 seconds, 90% of the time. Similarly, 10 minutes and 35 seconds, 90% of the time is the inferred time standard for the assembly of the full alarm assignment.

FSFD does not have defined service levels for alarm handling, chute, and travel times. City council has approved service levels for the first response for emergencies and a full alarm assignment.

Table 17: NFPA 1710 Performance Standards

Time Segment	NFPA 1710 Standards	FSFD Service Level
Alarm answering	15 sec/90th Percentile	n/a
Alarm processing	60 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	395 sec/90th Percentile**	600 sec/90th Percentile
Full alarm assignment with 15 firefighters	635 sec/90th Percentile**	360 sec/90th Percentile after first arriving four firefighters

**NFPA calls for 16 firefighters **Inferred standard*

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 or composite service 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 number of firefighters, or an ERF, to safely manage the incident. Response performance and the ability to assemble an ERF is assessed in the following section.

4.4 FSFD 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 Fort Saskatchewan City Council Policy, fire department service level response goals for emergency incidents within the city boundary. The NBC-AB2019 10-minute response initial response for structure fires will also be assessed.

SCES 911 provides dispatching services for the FSFD. SCES 911 dispatchers captured all emergency incident timestamps. The incident timestamps included:

- Incident begins
- Station or firefighter 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. 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)

In February 2020, FSFD transitioned from a POC department to a composite career and POC department. A minimum staffing model of three firefighters plus a supervisor was implemented on a 24 hour/7 days per week basis. As a result, response performance improved dramatically following this change. To reflect this change, only in-city emergency responses from February 2020 to July 2022 were included in this analysis.

Further, only incidents that involved a response by a fire/rescue apparatus were analyzed. As a result, all command vehicles were excluded in assessing the initial response performance of FSFD. This methodology is consistent in measuring response performance for NFPA 1710 and the National Building Code of Canada – 2019 Alberta Edition. It is also consistent in assessing the

compliance with the City of Fort Saskatchewan policy of "1. A fire engine with three first responders at all emergencies within 10 minutes, 90% of the time."

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 1225 suggests alarm answering should be completed within 15 seconds and alarm processing within 60 seconds, both 90% of the time. 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.

Table 18. 90th Percentile Alarm Handling Performance by Incident Type provides an assessment 90th percentile times taken for alarm handling for different incident categories.

Table 18: 90th Percentile Alarm Handling Performance by Incident Type (in secs)

Incident Type	Feb-2020	2021	Jul-2022	3-year
Medical	248	300	379	322
Public Service	200	133	227	230
MVC	113	97	296	210
Dangerous Goods/HAZMAT	122	198	144	145
Fire	149	120	211	187
Rescue	n/a	147	62	141
Alarms	87	96	229	138
All incidents	212	281	356	285
NFPA 75 sec compliance	65%	57%	19%	50%

The following key observations regarding alarm handling time were noted:

- Medical incident alarm handling was trending upward and more than two minutes longer than fire-related incidents
- For most categories, alarm handling increased considerably in the first half of 2022
- The compliance with the 75 second NFPA 1225 standard decreased throughout this period, complying 50% of the time in 2022

Observation #21: SCES alarm handling performance for emergency incidents exceeded the NFPA 1225 alarm handling standard of 75 seconds by a considerable margin. The 90th percentile compliance for the study period was 50% but trending downward throughout the study period. Further, as noted in Section 3, performance metrics are not identified in the city's contract with SCES.

Recommendation #21: Identify alarm handling process improvement opportunities and benchmarks.

(Suggested completion: 1-12 months)

Rationale: *Alarm handling 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 handling can contribute to increasing response time and intervention timelines. When these processes are extended, a root cause analysis should be undertaken with the aim of identifying process improvement opportunities. There are numerous potential causes of extended alarm handling including complex incidents, difficulty in identifying a location and transfer of calls between agencies. Alarm handling times for medical incidents were particularly extended. As a result, FSFD administration should work with SCES and possibly Alberta Health Services with the aim of identifying opportunities to improve that process. Further, alarm handling times should be monitored and reported regularly.*

4.4.2 Chute Time Performance

Chute time is measured from the point of fire department notification until the first responding fire/rescue apparatus has responded. For career staff, chute 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 paid-on-call responders, chute time (or 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.

Chute 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. 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 the performance and optimize response performance. FSFD has an internal goal of 90 seconds for chute time.

Table 19. Chute Performance by Incident Type identifies chute times for broad categories emergency incident types. Where the dataset is too small to accurately calculate a 90th percentile, a designation of n/a was applied, and this data was not included in the analysis.

Table 19: Chute Performance by Incident Type (in secs)

Incident Type	Feb-2020	2021	Jul-2022	3-year
Public Service	n/a	70	130	116
Dangerous Goods/HAZMAT	153	157	75	155
Rescue	n/a	142	82	141
Fire	117	122	171	141
MVC	106	166	90	123
Alarms	133	106	108	118
Medical	115	109	101	111
90th percentile	123	112	106	116
FSFD 90 sec compliance	67%	74%	85%	74%
NFPA 80 sec compliance	57%	61%	78%	64%

The following key observations regarding chute time were noted:

- The 90th percentile chute times decreased from 123 seconds in 2020 to 106 seconds in this period.
- Chute times for fire-related incidents increased in this period.
    - Fire incidents would typically be longer than other incident types as firefighters require additional time to put on PPE.
- Overall compliance with the 90 second FSFD chute time standard was 74% but was trending upward in this period.

Observation #22: FSFD has done well to improve chute times, which improved over the study period. However, chute time increased for fire-related incidents and overall compliance was over the FSFD 90 second chute time goal by a considerable margin. The 2022 90th percentile chute time for fire-related incidents was 171 seconds, nearly twice the goal. FSFD chute times are monitored and reported to staff.

Recommendation #22: Investigate opportunities to improve chute time for fire-related incidents and continue to monitor and report chute time performance.

(Suggested completion: 12-24 months)

Rationale: *Chute times for fire-related incidents can be expected to be longer than others as firefighters require additional time to change into their PPE. However, chute times for fire-related incidents are trending upward. Changes to the notification processes such as implementing pre-alerts may improve chute time. Any improvement in chute time will improve total initial response time.*

4.4.3 Travel Time Performance

Travel time is measured from the point of a fire/rescue apparatus leaving the fire station to the 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 a single station.

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. FSFD does not have a specific travel time goal.

Table 20. 90th Percentile Travel Performance by Incident Type identifies the 90th percentile travel time for emergency incidents within the city. Rescue and public service incident types in 2020 did not have enough incident data to calculate a 90th percentile and were designated as n/a.

Table 20: 90th Percentile Travel Performance by Incident Type (in secs)

Incident Type	Feb-2020	2021	Jul-2022	3-year
MVC	542	341	530	476
Fire	343	498	456	465
Dangerous Goods/HAZMAT	342	662	331	400
Medical	391	395	418	400
Rescue	n/a	201	401	381
Public Service	n/a	391	265	371
Alarms	343	362	336	352
90th percentile	375	410	416	399
240 sec compliance	45%	46%	42%	45%

The following key observations regarding travel time were noted:

- The 90th percentile travel times increased over the three-year period.
- The 90th percentile travel times for fire-related incidents increased by 35% during this period
    - As the city continues to develop and road networks are extended, travel times will increase

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 395 seconds for the first arriving fire apparatus in urban areas (see Section 4.3.2).

Table 21. 90th Percentile Response Performance by Incident Type identifies the total response time for the incident categories. Total response time includes alarm handling, chute, and travel time segments. Additionally, compliance with NFPA 1710 (395 sec) standard and Fort Saskatchewan City Council Policy on fire department service levels (600 sec) was measured.

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

Incident Type	Feb-2020	2021	Jul-2022	3-year
Medical	622	688	763	692
MVC	691	577	717	684
Fire	522	674	713	672
Dangerous Goods/HAZMAT	n/a	507	554	569
Public Service	n/a	507	554	569
Rescue	n/a	427	545	533
Alarms	502	536	514	518
90th percentile	590	677	733	670
NFPA 395 sec compliance	47%	42%	33%	41%
City 600 sec compliance	91%	82%	77%	84%

The following key observations regarding response time were noted:

- The three-year 90th percentile response time ranged from 11 to 11.5 minutes for medical, MVC and fire-related incidents.
- Response times trended upward for all incident categories in this period.
- Compliance with the NFPA 1710 response standard was relatively low at 41%
- Compliance with the city policy was decreasing, and 77% in 2022.

The performance for each time segment in total response time varied by incident category. Table 22. Three-Year 90th Percentile Response Performance by Incident Type provides a summary of three-year performance by incident category for each time segment – alarm handling, chute, and travel time. As 90th percentiles are used for each time segment data set, the total will not sum to total response time.

Table 22: Three-Year 90th Percentile Response Performance by Incident Type (in secs)

Incident Type	Alarm Handling	Chute	Travel	Total Response
Medical	322	111	400	692
MVC	210	123	476	684
Fire	187	141	465	672
Dangerous Goods/HAZMAT	145	155	400	615
Public Service	230	116	371	569
Rescue	141	141	381	533
Alarms	138	118	352	518
90th percentile	285	116	399	670

The following key observations regarding response time segments were noted:

- At more than three times the NFPA standard, alarm handling comprised a disproportionately long-time segment of total response time.
- Alarm handling was shortest for alarms and longest for medical incidents. (medical incidents require more data pre-dispatch)
- Chute time was shortest for medical incidents and longest for dangerous Goods/HAZMAT.
- Travel time was longest for MVCs and fire-related incidents and shortest for alarms.
- The three-year 90th percentile response time for all incidents was 670 seconds.

Fort Saskatchewan City Council has approved a policy on fire department service levels. The policy identifies two initial response time standards: one, a fire engine and three firefighters will arrive at emergencies within 10 minutes, 90% of the time; two, a supervisor will arrive in a command vehicle in 10 minutes, 90% of the time.

Table 23 below identifies the three-year compliance with the NFPA 1710 standards for all time segments of response and the city's fire engine standard.

Table 23: Summary of Response Compliance with NFPA Standards and City Policy

	Standard (sec)	3-year
Alarm Handling	60	50%
Chute	80	64%
Travel	240	45%
Initial Response (NFPA 1710)*	380	36%
Initial Engine Response (Council Policy)	600	84%

** Excludes call/alarm answering of 15 sec*

The following key observations regarding compliance with NFPA 1225/1710 standards and city policy were noted:

- Compliance with the NFPA standards was greatest for chute time and lowest for overall response time.
    - This was largely a result of extended alarm handling and travel times.
- The first FSFD fire engine arrived within 10 minutes 84% of the time, for all emergency incidents in this period.
    - FSFD is not fully compliant with the city policy to have a fire truck arrive within 10 minutes, 90% of the time.
    - 90th percentile response times were trending upward for emergency incidents within the city during this period.

4.4.5 Structure Fire Performance

This section focuses specifically on FSFD response performance specifically for structure fires. From February 2020 to July 2022 there were 49 structure fires. Command vehicles were not included in this analysis as they are not considered capable of initiating fire suppression activities. This methodology is consistent in measuring response performance for NFPA 1710 and the National Building Code – 2019 Alberta Version.

Table 24. Summary 90th Percentile Structure Fire Response Performance provides a three-year summary of response time segments and compliance with NFPA and city policy. The limited number of structure fires over this period can impact the calculation of

Table 24: Summary 90th Percentile Structure Fire Response and Compliance with Standards and City Policy (in secs)

Time Segment	3-year
Alarm Handling	180
Chute	141
Travel	467
Total Response	661
NFPA 1710: 380 sec compliance	30%
City Policy: 600 sec compliance	83%

The following key observation regarding structure fire response performance was noted:

- The first arriving FSFD fire engine arrived at structure fires within 10 minutes, 83% of the time.
    - FSFD is not fully compliant with the policy to have a fire engine arrive within 10 minutes, 90% of the time.

The three-year 90th percentile alarm handling and chute times for structure fires were used to calculate the theoretical 10-Minute Response Coverage in the next section, Response Time Mapping Analysis.

4.4.6 Supervisor Response Performance

Policy SAF-015-C, Fire Department Service Level identifies the following emergency response goal for supervisor:

- *A supervisor in a command vehicle shall be on scene at all high risk, complex or technical emergencies within 10 minutes, 90% of the time.*

Table 25. Supervisor Response Performance identifies the 90th percentile time taken for supervisors to respond to emergencies within the city. It also includes the compliance with the service level for supervisor response.

Table 25: Supervisor Response Performance (in secs.)

	Feb-2020	2021	Jul-2022	3-year
90th percentile	837	825	789	824
600 sec compliance	76%	69%	68%	71%

The following key observations regarding supervisor response performance were noted:

- The 90th percentile supervisor response time was 824 seconds for emergencies within the city.
- The supervisors arrived within 10 minutes, 71% of the time during this period.
    - FSFD is not fully compliant with the policy to have a supervisor arrive within 10 minutes, 90% of the time.

Observation #23: Fort Saskatchewan City Council is to be commended in establishing specific fire department service levels in their policy. Fire Department Service Levels identifies three-time specific response goals:

1. A fire engine and three firefighters will arrive at emergencies within 10 minutes, 90% of the time.
2. A supervisor will arrive in a command vehicle in 10 minutes, 90% of the time.
3. Meet full deployment of resources required for structure fires within six minutes of the initial arriving apparatus, 90% of the time.

While compliance for the first two standards is relatively high, they are not fully achieved. Further, the third service level regarding full deployment time is not achievable with the current resources available, nor is it measured and reported on.

***Recommendation #23**: Review Service Level Policy for Emergency Response in Fort Saskatchewan*

(Suggested Completion: 12-36 months)

***Rationale**: In Alberta, municipalities are not required by law to provide fire and rescue services. The Municipal Government Act empowers the AHJ, 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 is considered a best practice.*

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."

Further, service levels should be achievable, measurable, and reported on.

4.5 Response Time Mapping Analysis

The following section includes two maps illustrating various scenarios of FSFD 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 Chute Time (in sec)) = Theoretical Travel Time (in sec)

Map 2. Theoretical 10-Minute Response Coverage illustrates the FSFD's theoretical 10-minute response area from their current fire station located at 10099 93 Avenue. 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-AV2019 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.

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 Chute Time (in sec)) = Theoretical Travel Time (in sec)

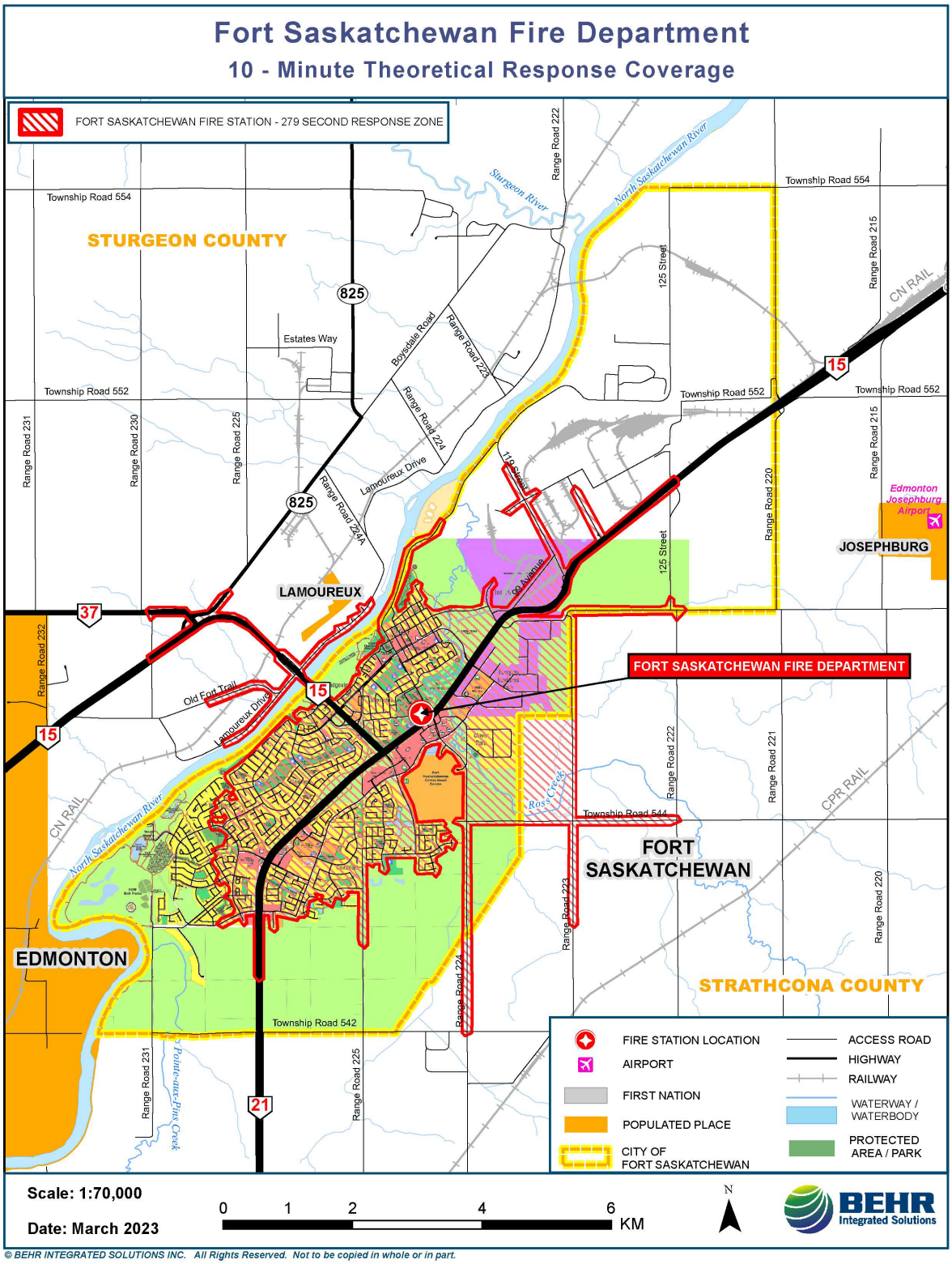
When applying this methodology, the theoretical travel time was:

600 sec – (180 sec + 141 sec) = 279 seconds

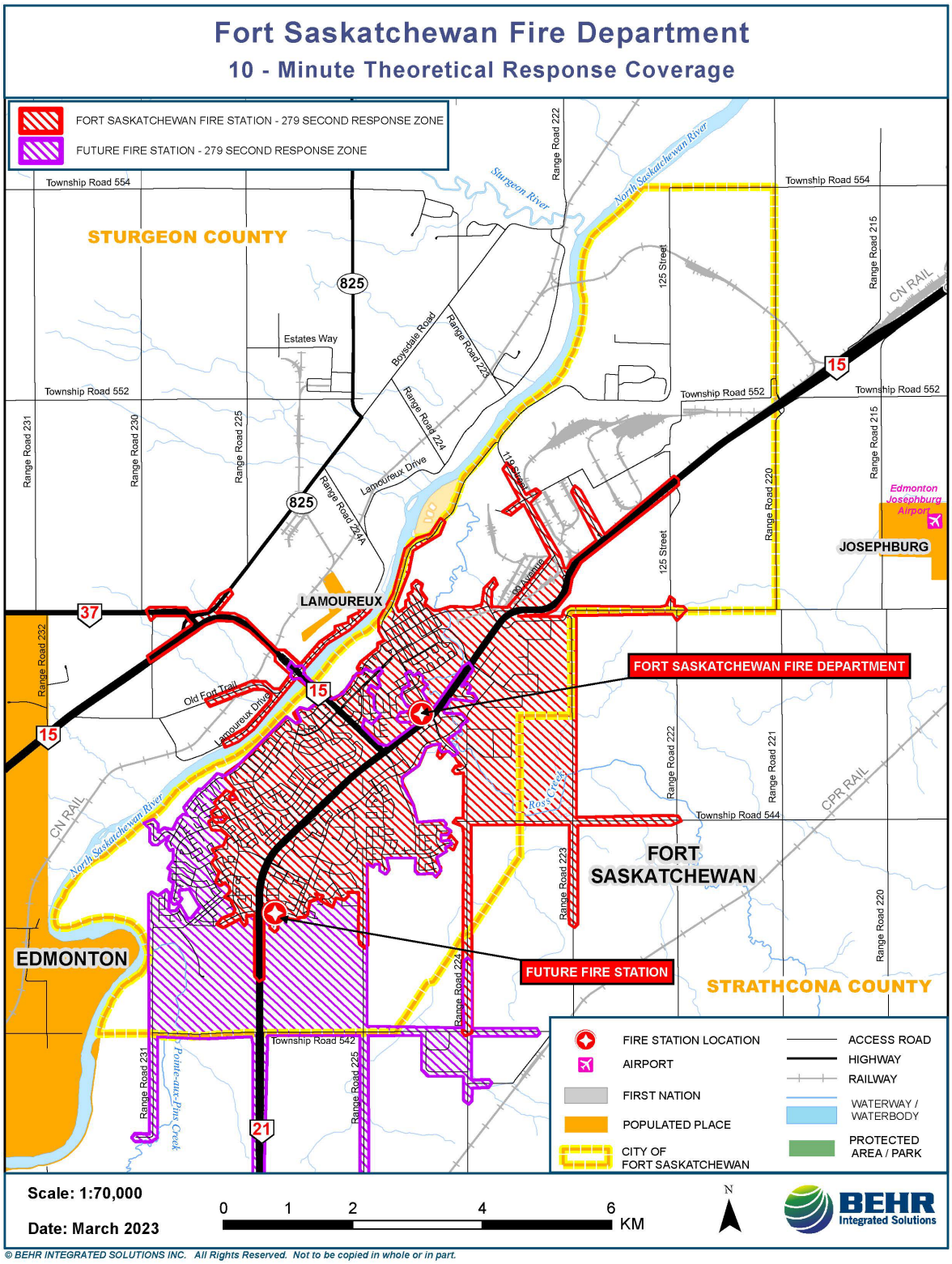
The 279 seconds of travel time were plotted using current City of Fort Saskatchewan road network and speed data.

Map 3. illustrates the potential added coverage provided if a new station was constructed at 151 Southridge Blvd. A 10-minute response time was modeled as it reflects the fire department service level policy for a fire engine response. It is also consistent with the requirement in the National Building Code – 2019 Alberta Version.

Map 2. Theoretical 10-Minute Response Coverage



Map 3. Theoretical 10-Minute Response Coverage, Includes Future Fire Station



The City of Fort Saskatchewan has procured a potential site for an additional fire station at 151 Southridge Blvd. Map 3 identifies the additional response coverage gained by adding this station. All the newly annexed area will be within a 10-minute fire department response. Additionally, the overlap in 10-Minute Response Coverage provides cross-coverage for most existing residential properties in the city.

Observation #24: Highway 15 provides the primary north to south response corridor for FSFD. Within 10 minutes, FSFD can respond northward to approximately 119 St., and southward to Wilshire Boulevard along Highway 15 from its current fire station. As illustrated by Map 2, the southwest corner of development and the newly annexed lands cannot typically be reached when responding from the station within 10 minutes, 90% of the time.

Recommendation #24: Review development options in the areas outside of a 10-minute fire department response

(Suggested Completion: 1-24 months)

Rationale: *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 are met which exempt 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 the 0.5 factor is not required. If a bylaw establishing sprinklers is implemented, the accompanying changes to the on-street and lot water supply will be required.*

4.6 Effective Response Force

The FSFD is a composite fire department, relying on an initial response of four, three firefighters on a fire apparatus and one supervisor responding in another vehicle. Additional firefighters and apparatus are required to complete the full alarm assignment for larger structure fires. These resources are drawn from call back of either career or POC firefighters and mutual and automatic aid from SCES.

NFPA 1710 suggests an effective response is 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. Policy SAF-015-C, Fire Department Service Level identifies the following emergency response goals:

Structural Firefighting

- *2 pumps, rescue response, 15 staff, plus incident command services*
- *Meet full deployment of above resources within 6 minutes of initial arriving apparatus 90% of the time.*

Table 26, 90th Percentile Assembly Time of an Effective Response Force includes data from all structure fires occurring between February 2020 and the end of July 2022. Structure fires are the incidents most likely to require up to 16 firefighters to manage. Compliance with this city standard is not easily measured. To measure the time taken to assemble 16 staff, the number of firefighters arriving in each apparatus type is required. This data was not available. The assumption that each arriving apparatus had an average of three firefighters was made to illustrate the time taken to assemble 15 firefighters. Cars, platoon chief vehicles and all fire apparatus were included in the count of arriving vehicles.

The 90th percentile time taken for second, third, fourth and fifth arriving vehicles was measured from the point of the first arriving vehicle to the arrival the respective vehicle in the calculation. As a result, the time for the first arriving was n/a as it was the starting point for the calculation.

Table 26: 90th Percentile Assembly Time of an Effective Response Force

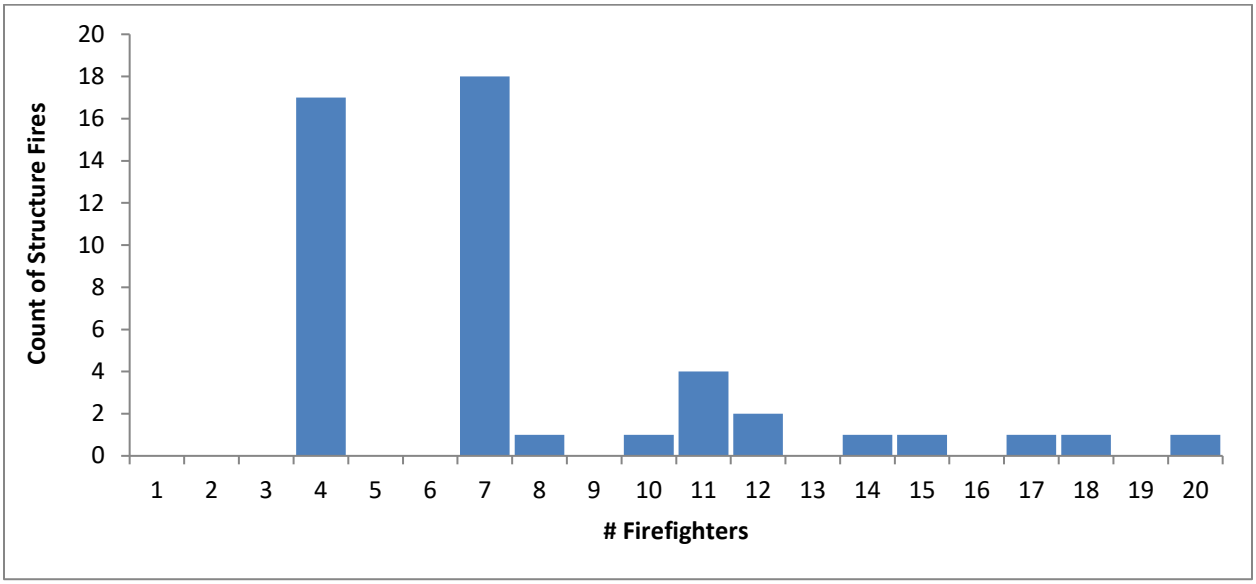
All arriving cars/apparatus	90th Percentile Time (sec)	Assumed Count of Firefighters on Each Arriving
1st arriving	n/a	3
2nd arriving	458	6
3rd arriving	2091	9
4th arriving	3629	12
5th arriving	8021	15

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

- The 90th percentile time for the second arriving car/apparatus for structure fires was over 7.5 minutes after the first arriving, and this is typically staffed with one supervisor/firefighter.
- The third arriving apparatus will typically arrive within 35 minutes of the initial arriving apparatus.
- Based on staffing assumptions of three firefighters per vehicle, it would take more than two hours to assemble 15 firefighters

Chart 7, Number of Firefighters by Structure Fire Frequency illustrates the number of firefighters responding to structure fire incidents from February 2020 to July 2022. 48 structure fires were included in this data set.

Chart 7: Number of Firefighters by Structure Fire Frequency (2020-2022)



The following key observations the number of firefighters assembling for structure fires were noted:

- Most (n=35) structure fires were managed with seven or fewer firefighters in this period
- Eight structure fires required 8-12 firefighters
- Five structure fires required 14-20 firefighters

Observation #25: FSFD is unable to achieve the city policy regarding assembling a full effective response force of 15 firefighters and apparatuses within six minutes of the first arriving apparatus, 90% of the time. Further, it routinely takes up to 30 minutes to add three or more firefighters to the initial responding four firefighters. While 14 of the 42 structure fires were managed with just four firefighters, 34 structure fires required more than four firefighters to manage. Delays in completing critical tasks and increased intervention times would have occurred for these incidents as the third arriving apparatus may have taken up to 30 minutes to respond. Delays or not being able to complete critical tasks may result in increased risk to firefighters, the public, and delayed interventions.

Recommendation #25: Increase minimum on-duty firefighter until a minimum staffing of six firefighters can be achieved (see three options listed below).

(Suggested completion: 2-5 years)

Options	Details	Advantages	Disadvantages
1. Full staffing in 2024 Preferred Option	• Add 14 positions in 2024 (8 fulltime and 6 paid-on-call) • Total operational staff 24 fulltime and 8 paid-on-call • 6 fulltime and 2 paid-on-call per platoon. • 3 fulltime and 1 paid-on-call on a truck, 2 trucks in station	• Enhanced response capability and ERF achieved in 2024 • Reduced administrative effort to maintain minimum duty strength of 6	• $1,390,000 budget increase in 2024
2. Incremental staffing - 4 years	• 2 fulltime and 2 paid-on-call - 2024 • 2 fulltime and 2 paid-on-call -2025 • 2 fulltime and 2 paid-on-call -2026 • 2 fulltime and 2 paid-on-call -2027 • Total operational staff 24 full time and 8 paid-on-call in 2027	• Fully implemented enhanced response capability and ERF in 2027. • Reduced administrative effort to maintain minimum duty strength of 6 by 2027 • Incremental budget increase per year of approximately $347,500 over 4 years	• Only minor enhancement to response capacity until full implementation in 2027 • Total $1,390,000 budget increase by 2027
3. Incremental staffing - 3 years: 4 paid-on-call and 4 AFC	• 4 fulltime and 2 paid-on-call in 2024 • 4 fulltime 2025 • 4 fulltime 2026 • Total operational staff 28 full time and 4 paid-on-call in 2026 • 6 fulltime and 1 paid-on-call per platoon, AFC are incident command	• Fully implemented enhanced response capability and ERF in 2026 • Reduced administrative effort to maintain minimum duty strength of 6 by 2026 • Incremental budget increase per year of approximately $750,000 over 2 years	• Only minor enhancement to response capacity until full implementation in 2026 • Total $1,630,000 budget increase by 2026

Rationale: *As the city grows the number of emergency incidents will increase. An increase in larger, more complex incidents and concurrent incidents will drive the need to increase response capacity or accept a reduced level of service. However, even with lowered service level goals large incidents will occur.*

The following options were considered:

Option	Implications
Status Quo	• No budget changes • Does not improve 10-minute response area coverage • Initial response of four firefighters increases risk to firefighters and delays intervention and incident management for larger incidents • Interview and survey participants identified the concerns regarding current response capacity • Interview participants identified that the reliability POC model was shifting and decreasing
Implement a standby rotation for POC firefighters	• Requires a high-level of participation from current POC firefighters • Estimated operating cost increase of approximately $110-150,000 for providing a stipend for 24/7 on-call coverage • Additional increased cost for 3 or 4 person call-in • Does not improve extended response time of second-arriving resources • Does not improve 10-minute response area coverage • Initial response of four firefighters increases risk to firefighters and delays intervention and incident management for larger incidents • Improves POC response reliability to assemble an ERF for larger incidents • Challenge scheduling POC firefighters around fulltime work • Interview participants identified a low interest in participating in an on-call rotation or standby schedule
Increase minimum staffing to six	• Requires a staffing model of 32 FTE firefighters to maintain a minimum on-duty strength of 6 firefighters • Increased operating cost of approximately (16 x $130,000) $2.08 M • Improves initial response capacity and firefighter safety • Increases capacity to respond to concurrent incidents • Increases capacity to support programs such as fire inspections and public education • Does not improve 10-minute response area coverage
Build new station, minimum staffing of three firefighters	• Construct a second fire station at 151 Southridge Blvd • Requires a total staffing model of 32 FTE firefighters to maintain a minimum on-duty strength of six firefighters or 3 per-station • Increased operating cost of approximately (16 x $130,000) $2.08 M plus cost of operating/maintaining new station • Improves initial response capacity and firefighter safety • Increases capacity to respond to concurrent incidents

	• Improves 10-minute response area coverage to include all annexed areas

The cost of increasing the minimum staffing is considerable. However, this model would provide up to six or seven initial responders to manage the current demand and the most frequent larger or concurrent incidents.

4.7 Critical Task Analysis

The purpose of completing a critical task analysis is to consider whether FSFD 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 devise is used).

As already discussed, FSFD has an initial response of three firefighters in a fire engine and one supervisor. Any additional resources, either firefighters or apparatus, requires call-in of POC firefighters or mutual or automatic aid. The arrival of the second apparatus will take up to 7.5 minutes and up to 30 minutes for the third after the arrival of the initial deployment. 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 27: 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 28: 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 29: 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 30: 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 31: 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 32: High Risk: Commercial, seniors home, industrial, strip mall, mid-rise residential

Initial Deployment	No. FF	Task Assignment
Ladder (if available)	4	Incident Command, Scene Safety, Size-up, IAP Development, Accountability, Resource Determination, Water Supply, 360 assessment, Aerial Operations, Forcible Entry, Primary Search, Fire Control, Incident Stabilization
Engine	4	Scene Safety, Water Supply, On-deck Assignment, Primary Search, Fire Control
Rescue	4	Scene Safety, On-Deck, Primary/Secondary Search, Fire Control
3rd 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
RDU & Pickup	2	Rehab, Command area, protection from elements
Total Personnel	19	

Observation #26: FSFD SOGs could be enhanced by identifying the number of firefighters and resources required to complete critical tasks. A critical task analyses embedded in response policies or guidelines will clarify incident resource requirements and the tactical priorities based on resource availability.

Recommendation #26: Complete a critical task analysis for common emergency incident types.

(Suggested completion: 6-12 months)

Rationale: *The Alberta OHS guide for firefighting identifies that response policies should include a critical task analysis. It states that "guidelines and policies developed should include, as per National Fire Protection Agency (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 moves it away from mere opinion for fire services. Performance measurement allows fire services to:

- Determine a baseline performance level according to the 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.

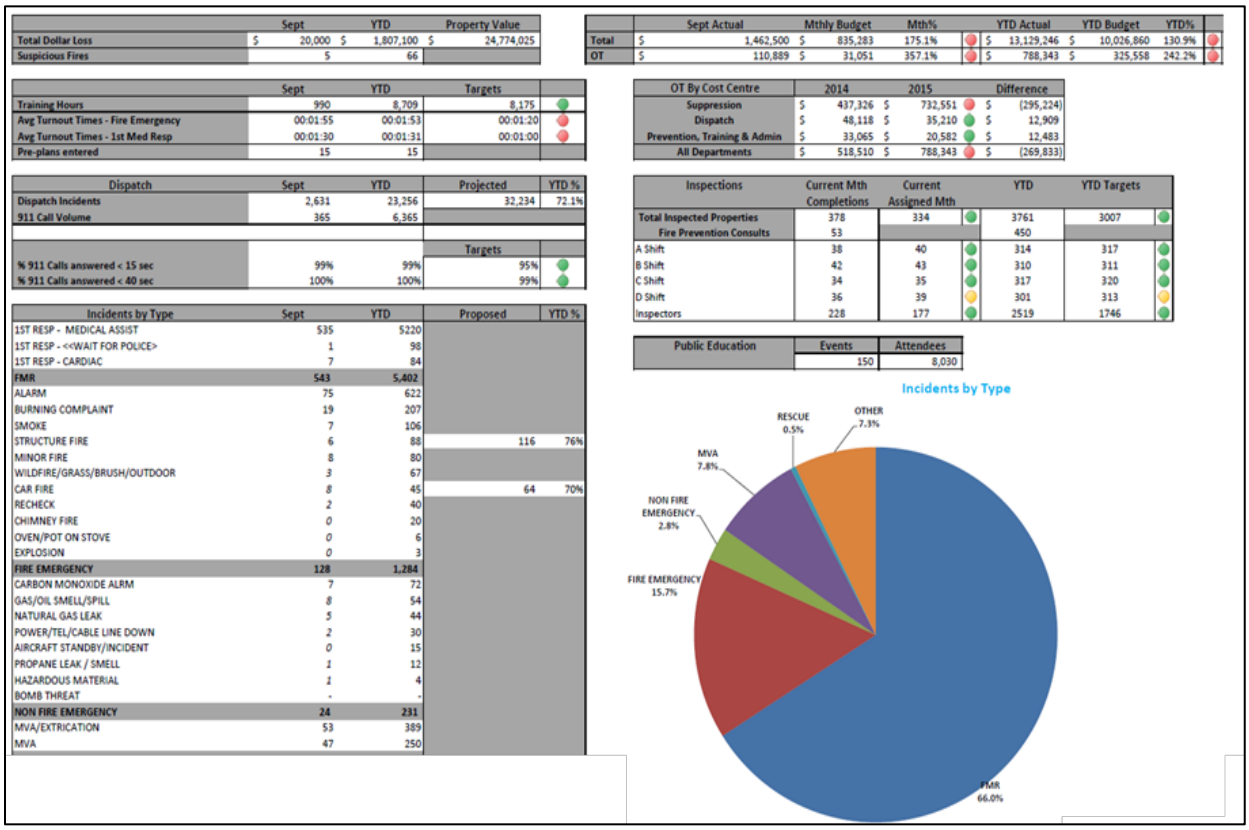
Measurable service levels and objectives, as well processes to access timely data must be in place to support performance measurement, management, and reporting. City Council is the authority having jurisdiction over establishing service levels. Senior administration and the fire chief should provide 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 develop a performance dashboard. Computer-aided dispatch (CAD) and record management system (RMS) technologies must be integrated to support this tool. The FSFD has recently implemented Fire Pro 2 which supports this functionality.

FSFD senior staff discuss operational performance metrics with their firefighters. Chute time performance is monitored and discussed. This is considered a best practice. As discussed in Section 4.4.2, chute time performance is extended for some incident types and an effort should be made to explore opportunities to improve it. Timely performance reporting on chute times will assist this process.

Figure 7. 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 FSFD's efforts to improve chute time.

Figure 7: 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

Public Education	Events	Attendees
	150	8,030

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

Observation #27: The FSFD has recently implemented a new records management system – Fire Pro 2. This software package supports the development of custom reports. The FSFD fire chief does not regularly provide Fort Saskatchewan City Council with performance reports.

Recommendation #27: Develop relevant performance metrics and provide a performance report for Fort Saskatchewan City Council

(Suggested completion: 12-24 months)

Rationale: *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 the compliance with council-approved service levels. It is difficult for a city council to evaluate their service levels without this information.*

SECTION 5
CONCLUSION

This fire services master plan was completed to assist the City of Fort Saskatchewan and the Fort Saskatchewan Fire Department (FSFD) 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. This analysis included a review of the operational and administrative aspects of the FSFD, community profile and risks, staffing, core service and program delivery, training, recruitment and retention, facilities, and major equipment.

Further, FSFD 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 27recommendations is:

- The City establishes a regulation for all new developments that enforces compliance with the NBCC-AB19's limiting distance and fire department response requirements.
- Establish of two full-time FSFD fire safety codes officer positions or alternatively contract out safety code, fire discipline requirements
- Update fire and life safety inspection schedules within the Fire Discipline QMP(s) to initiate a risk-based inspection program and upon request or complaint
- Establish a second deputy chief position to support training and fire prevention functions.
- Update Council Policy SFA-015-C Fire Department Service levels to indicate the current services provided that FSFD are capable to provide (training, resources, and skill maintenance).
- Establish a full-time dedicated Director of Emergency Management position.
- Amend the existing life cycles for first line heavy apparatus to 15 years of first line and five years in reserve including adequate contributions to capital reserves.
- Review Service Level Policy for Emergency Response in Fort Saskatchewan
- Increase minimum on-duty firefighter staffing to a minimum staffing of 6 firefighters 24 hours a day, 7 days a week. Three options are provided in the fire service master plan
- Develop relevant performance metrics and provide a performance report for Fort Saskatchewan City Council

Although each recommendation has a corresponding timeframe, it is important to note this FSMP needs to be revisited on a regular basis to confirm that the observations and recommendations remain relevant. The recommendations outlined in this FSMP will better position the FSFD to mitigate and manage community risks, monitor response capabilities and performance, and maintain excellent community relationships and value for money.

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 City of Fort Saskatchewan

APPENDICES

Appendix A: Glossary of Terms

Appendix B: List of Figures, Maps, and Tables

Appendix C: Theoretical Response Mapping Methodology

Appendix D: FSFD Online Firefighter Questionnaire Results

Appendix E: FSFD Job Descriptions

Appendix F: Apparatus and Light Duty Vehicles

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 service receives calls, processes them, and then dispatches emergency units to the correct location in the appropriate time period.
Emergency Operations Centre (EOC)	The protected sites from which civil officials coordinate, monitor, and direct emergency response activities during an emergency or disaster.
Emergency	Any occasion or instance that warrants action to save lives and to protect property, public health, and safety. A situation is larger in scope and more severe in terms of actual or potential effects.
Fire Suppression	The application of an extinguishing agent to a fire at a level such that an open flame is arrested; however, a deep-seated fire will require additional steps to assure total extinguishment.
Hazard Analysis	A document, which identifies the local hazards that have caused, or possess the potential to adversely affect public health and safety, public and private property, or the environment.

Impact	The effect that each hazard will have on people such as injury and loss, adverse effects on health, property, the environment, and the economy.
Incident	A situation that is limited in scope and potential effects.
Intervention Time	The time from fire reporting to the point where the first arriving pumper, or other apparatus providing comparable functions, arrives at the fire scene and directs an extinguishing agent on the fire.
Mutual Aid Agreement	An agreement between jurisdictions to assist each other during emergencies by responding with available manpower and apparatus.
National Fire Protection Association	The National Fire Protection Association 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

Appendix C: Theoretical Response Mapping Methodology

Response travel times are directly influenced by station location and can be varied based upon a cost/risk analysis and the development of performance targets.

Base Data Layers Requested

- Hydrology
- Single Line Road/Transportation Network
- Railways
- Municipal Boundaries
- Parks
- Projection File
- Orthophoto (GeoTIFF, Mr.SID), if available
- Emergency Services Locations

Data Formats

- Preference of ESRI Shapefiles

Purpose of Files

A. Hydrology
   i. Identify needs for response to water locations (if dependent on a water response unit)
   ii. Can be identified and analyzed with the rail network to locate spill contaminations, as well as containment for overland flow & flooding to water spills
   iii. Locations of bridge crossings which can convert to varying incidents, as MVC/MVA, spill contaminants, etc.
   iv. Assists in the definition of the map for locational awareness by others
   v. Completes the map

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

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

D. Municipal Boundaries
   i. Identifies the limits to response for mutual aid and responsibilities when overlaps occur within a response area. Also identifies sub areas for specific mapping and

identification of municipal and regional response zones. Provides information for gap analysis for future state locations or refinement of locations.

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

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

G. Orthophoto (GeoTIFF, Mr.SID), if available
   i. We typically do not use the ortho on the output maps, but the analysis sometimes needs clarification of what is on the ground, and we use it to quickly ground truth locations and information needed prior to asking clients for clarification, or to substantiate clarification of an area.
   ii. Is a nice to have, yet hard to use, as it takes up a lot of memory/space and is difficult to ship/transfer.

H. Emergency Services Locations
   i. Identify the actual location rather than a theoretical location based on an address match to ensure that the data location is as correct as possible, and no mis-locations are identified on the initial running of the theoretical response times.
   ii. Locations may be moved from within a parcel to the front of the parcel whereby it touches the road network. Ensures the response from the station is captured. There are no corrections made to the movement of station to time, as it is typically within 50 metres.

Theoretical Response Zone

A. Assumptions
   i. Weather is average – no storms, rain, snow etc.
   ii. Roadway segments contain a node/junction at intersections
      - If not available, road network needs to be cleaned and fixed
   iii. Roadways need to sometimes extend beyond some municipalities
   iv. Emergency responders are trained on response vehicles
   v. Response vehicles are in good condition
   vi. Roads are dry and in good condition
   vii. Left turns are not reduced by a time %
   viii. Road speeds are provided by client, if not
      - Road class table used to populate speeds based on road classification

- Road speeds are reduced from the posted sign, typically no more than 5%

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

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

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

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

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

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

B. Response Time

i. Customized response based on Emergency Services Input

ii. Response time includes 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

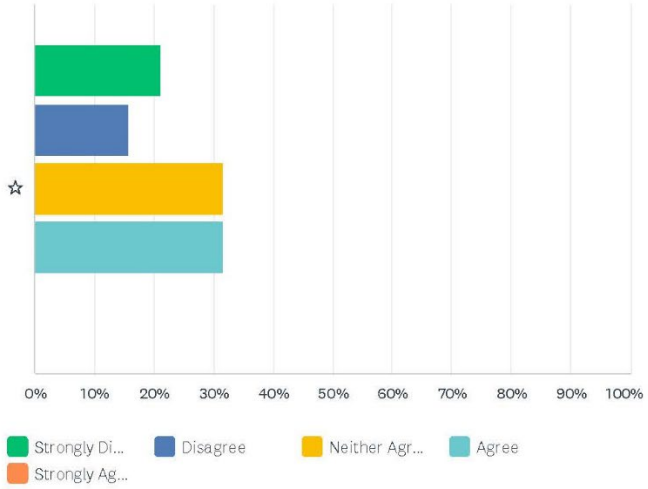
ii. Tends to be time consuming

- 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.

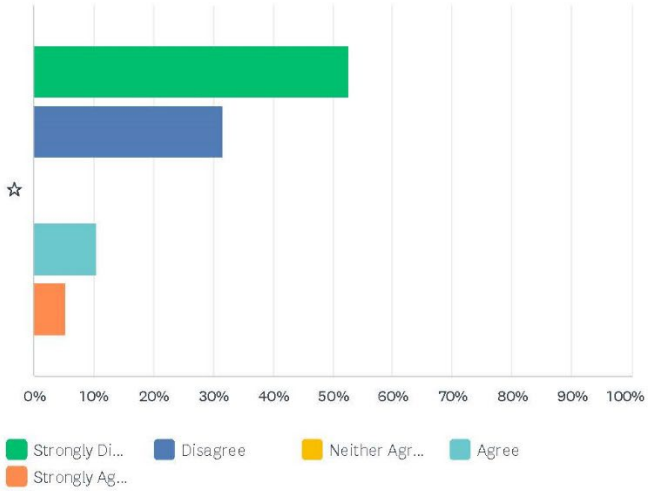
Answered: 19 Skipped: 0



	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.

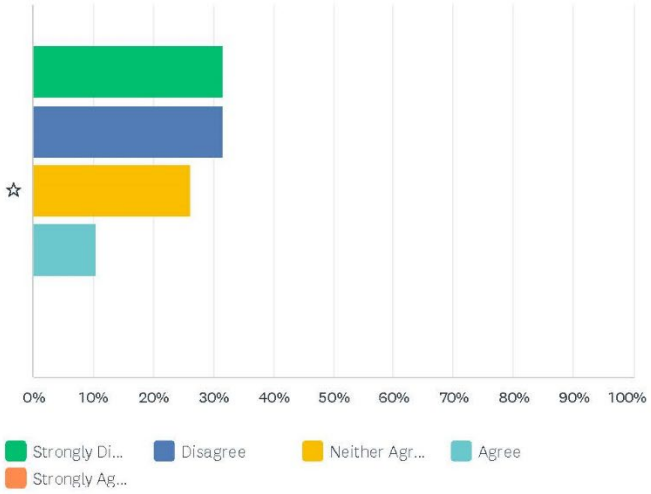
Answered: 19 Skipped: 0



	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.

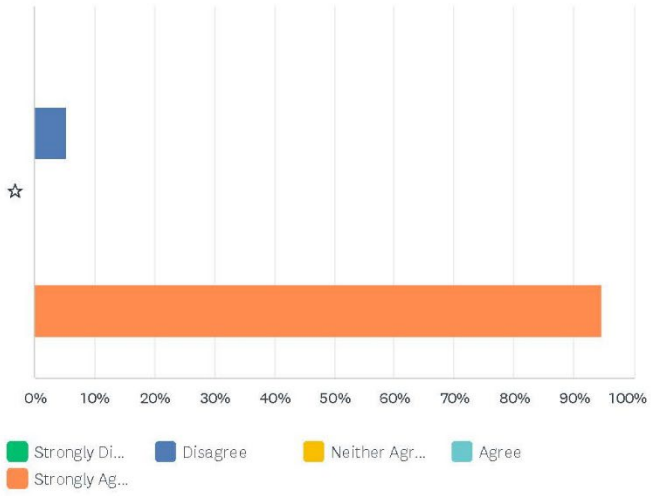
Answered: 19 Skipped: 0



	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.

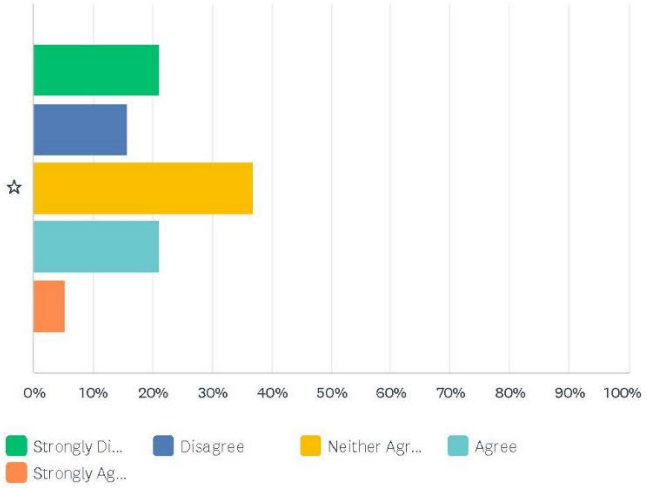
Answered: 19 Skipped: 0



	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

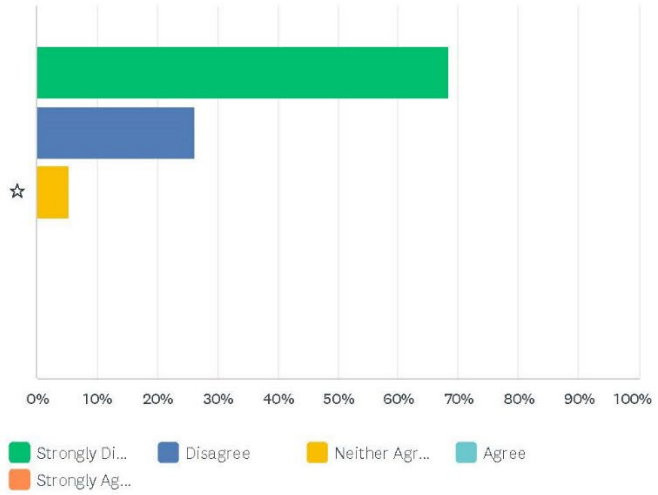
Q6 What are the top 5 risks to your community based on your community risk assessment?

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.

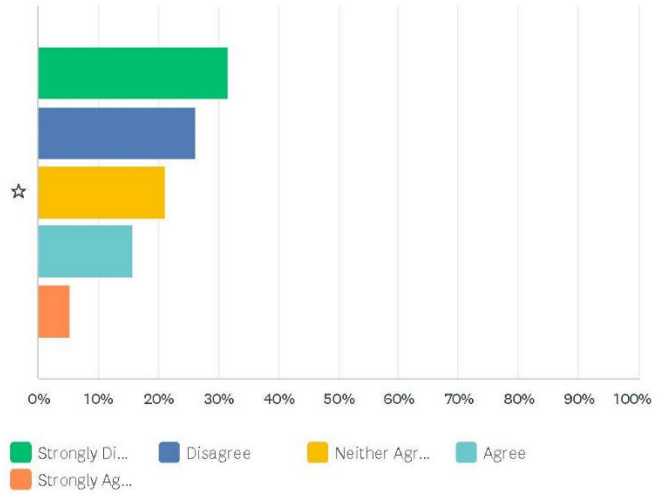
Answered: 19 Skipped: 0



	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.

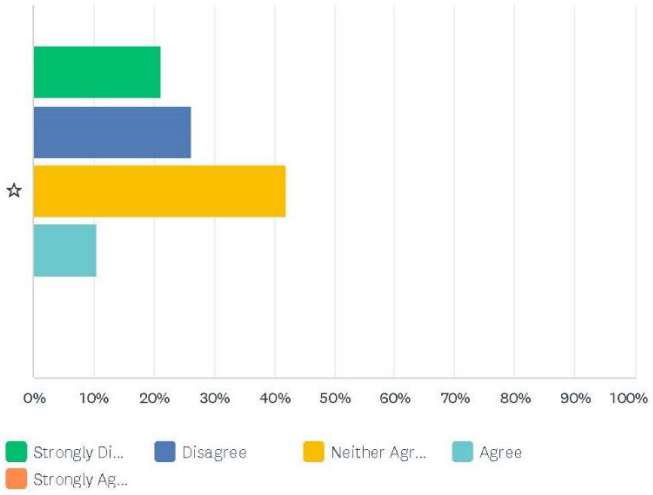
Answered: 19 Skipped: 0



	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.

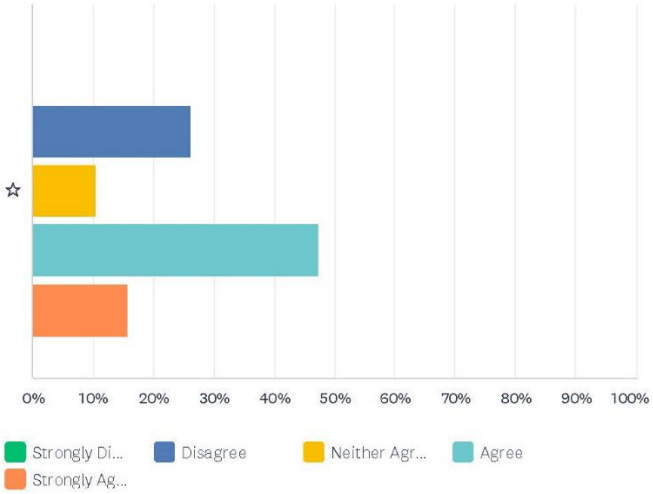
Answered: 19 Skipped: 0



	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.

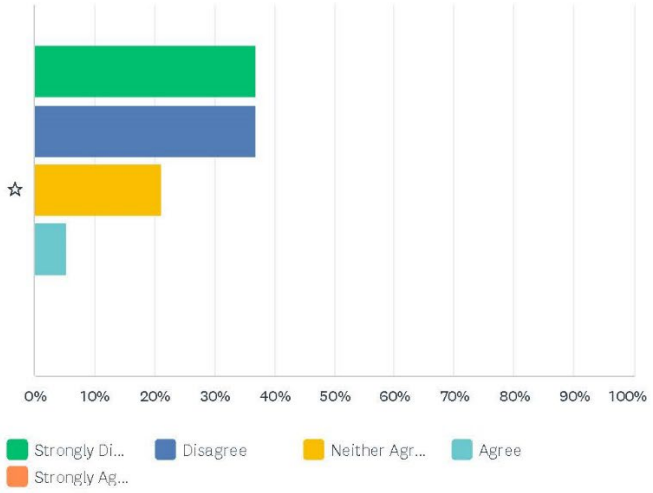
Answered: 19 Skipped: 0



	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.

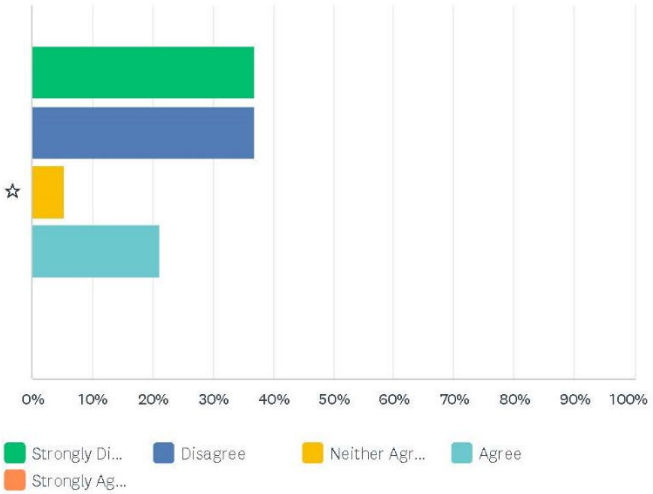
Answered: 19 Skipped: 0



	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.

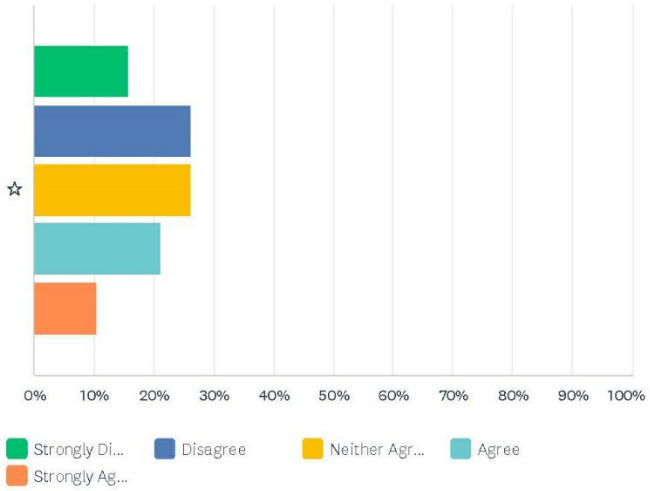
Answered: 19 Skipped: 0



	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.

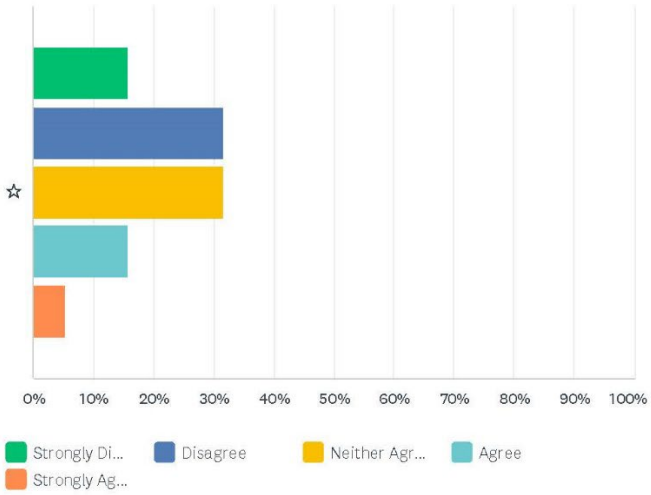
Answered: 19 Skipped: 0



	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.

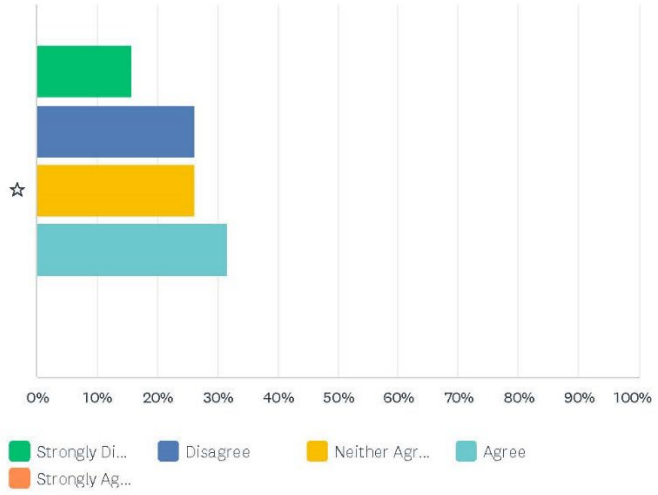
Answered: 19 Skipped: 0



	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.

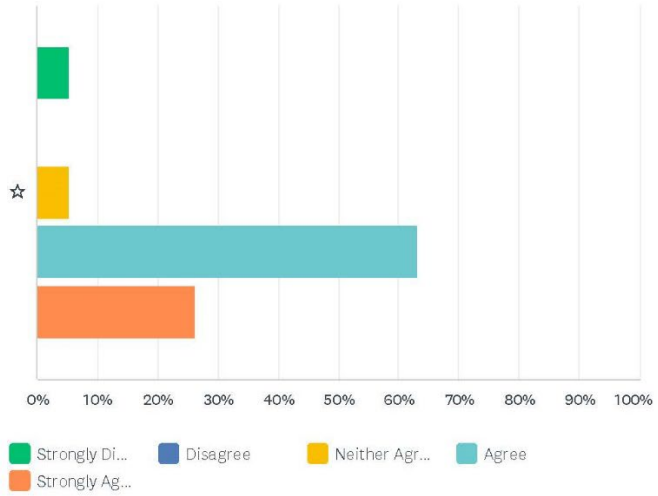
Answered: 19 Skipped: 0



	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).

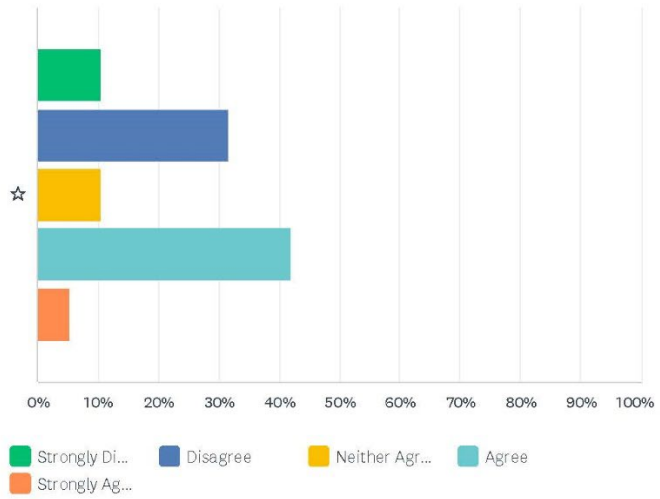
Answered: 19 Skipped: 0



	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.

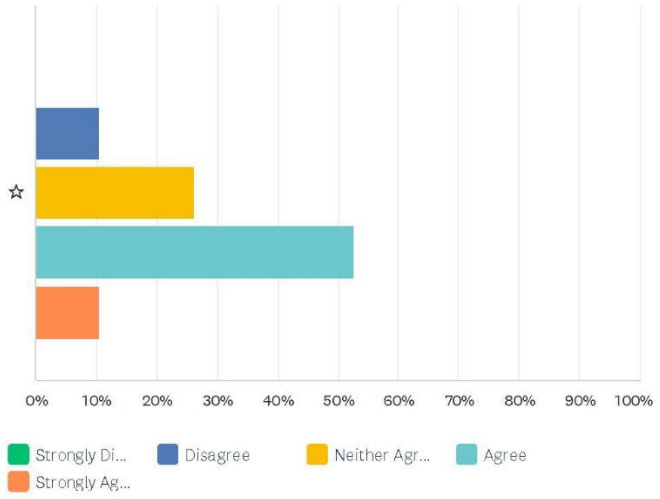
Answered: 19 Skipped: 0



	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.

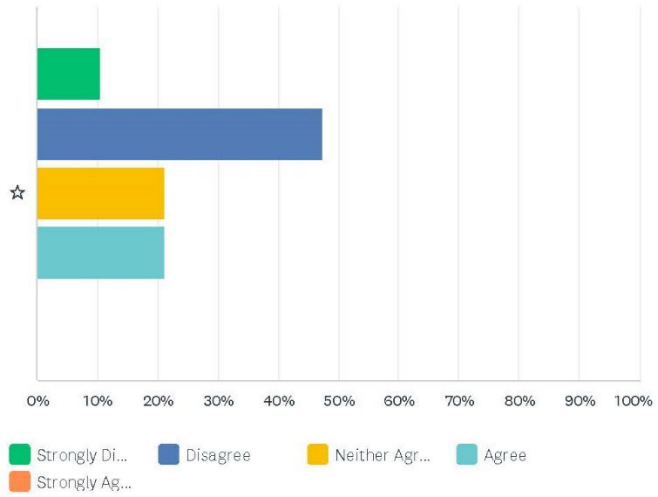
Answered: 19 Skipped: 0



	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.

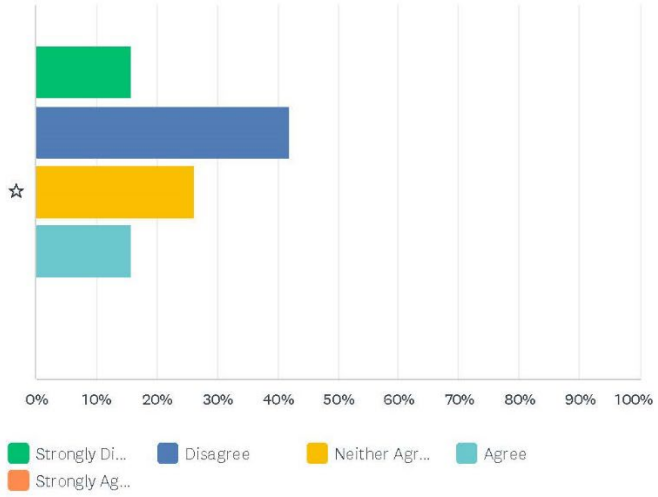
Answered: 19 Skipped: 0



	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.

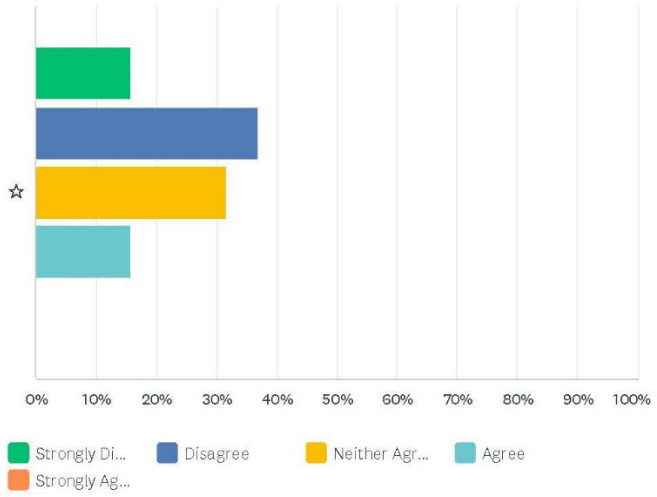
Answered: 19 Skipped: 0



	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.

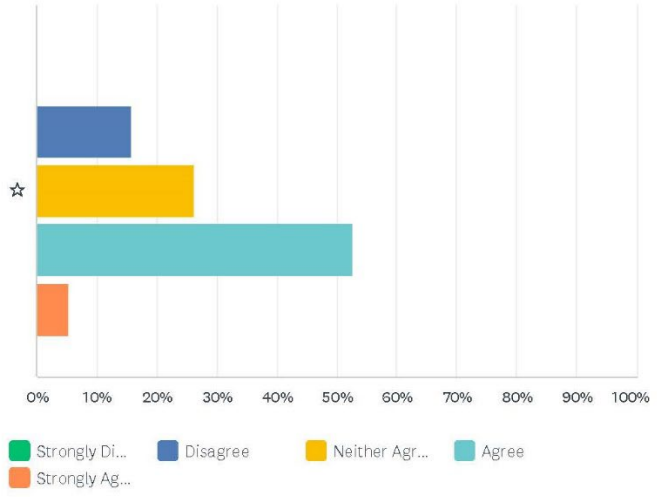
Answered: 19 Skipped: 0



	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.

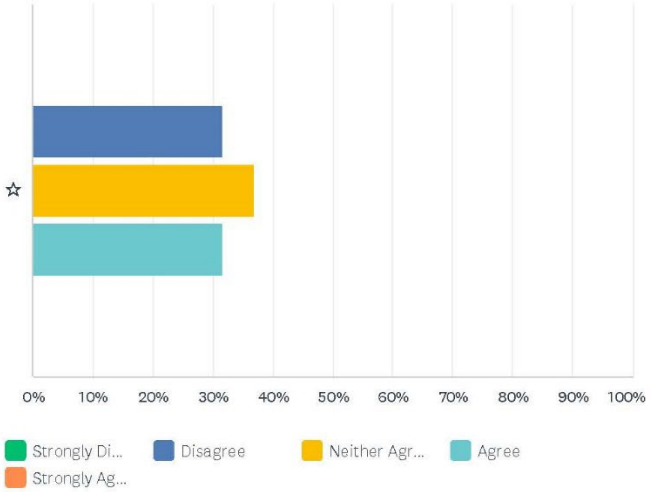
Answered: 19 Skipped: 0



	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.

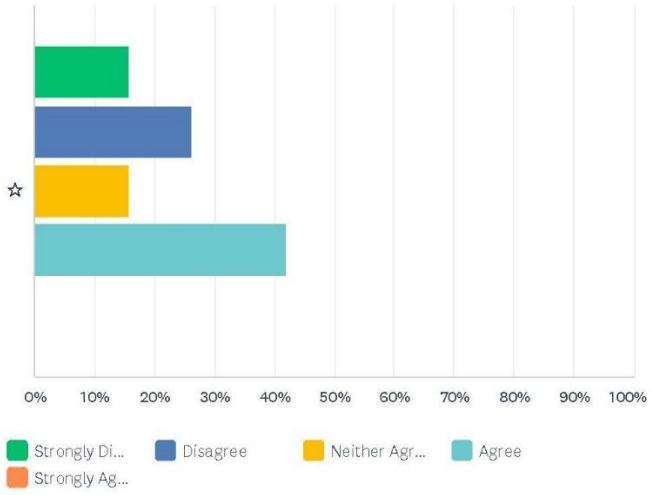
Answered: 19 Skipped: 0



	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.

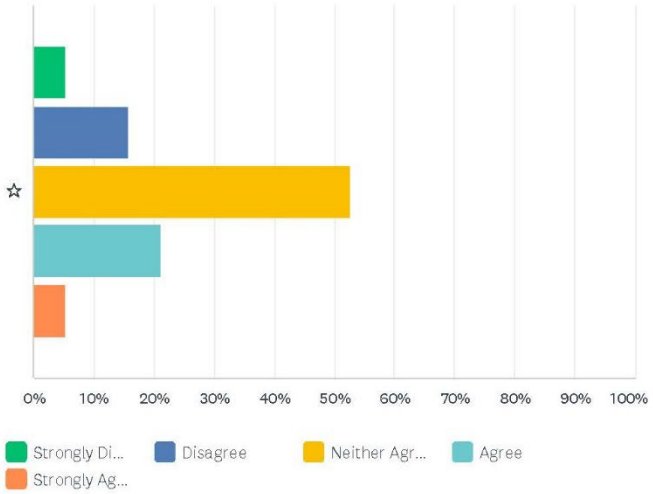
Answered: 19 Skipped: 0



	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.

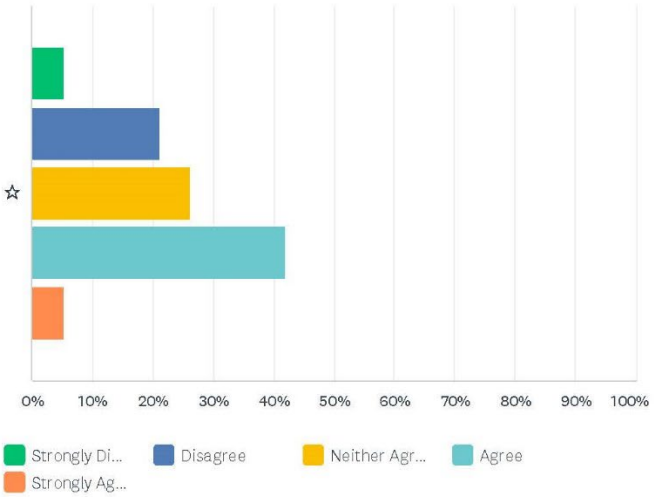
Answered: 19 Skipped: 0



	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).

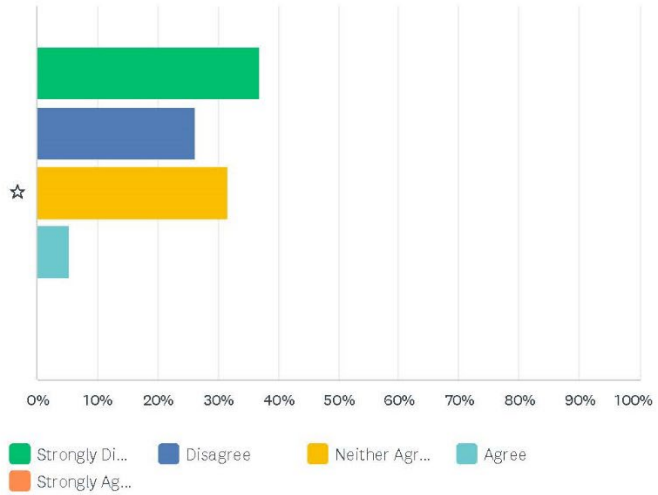
Answered: 19 Skipped: 0



	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: Fire Chief

General Accountability:

Reporting to the General Manager of Community and Protective Services, the fire chief is accountable for the effective planning, development, coordination, implementation and delivery of fire and emergency management programs and services for the City of Fort Saskatchewan's composite Fire Services Department.

Specific Accountabilities:

1. Develop strategic short and long-term plans for the provision of fire and emergency management programs and services within the framework of the city's corporate strategic plan
2. Provide advice, support and guidance to the General Manager of Community and Protective Services, Leadership Team and Council on matters pertaining to fire services. Liaise with other city administrative staff and serve on ad hoc interdepartmental project teams and Council committees as required. Serve as a resource and liaison to community, regional and government agencies in response to issues, trends and service needs related to fire and emergency management
3. Provide clear expectations, coaching, evaluation, and feedback to direct reports that build on strengths and also include performance management and disciplinary actions when required; hold staff accountable for behaviours and actions; and promote staff development
4. Uphold integrity and respect: build a workplace culture that is respectful and trusting, where personal integrity and professionalism are valued
5. Prepare, coordinate, and manage the department operating and capital budgets through monthly and annual, or as required, financial reporting to ensure budget and finances are within approved guidelines
6. Ensure effective and efficient approaches to resource management throughout the department for the purposes of customer satisfaction, cost-effective service delivery and risk management
7. Ensure effective management of a progressive and timely reaction when addressing emergent situations and matters as they may arise
8. Review, develop, evaluate, interpret, maintain, and enforce municipal bylaws, provincial legislation, collective bargaining agreements and other agreements/plans, such as the Fire Services Bylaw, *Safety Codes Act*, Municipal Emergency Plan, mutual aid agreements, 911 dispatch agreement and ambulance lease. Ensure and maintain an understanding of applicable municipal, provincial and federal legislation
9. Appointment as Acting director of emergency management, as required, in the Emergency Operations Centre and during absences of the director of emergency management

10. Oversee safety and operations on scene during emergency responses as required. City liaison for various community advisory panels, after hours special projects and meetings, and provide leadership and information to the Department on a 24-hour basis
11. Coordinate and develop strength based approaches to emergency responses and mental wellness with the RCMP, Dispatch and Municipal Enforcement Services
12. Create and maintain a positive-oriented environment, upholding integrity and respect for the Service; achieving results through consistent direct leadership availability, leading through positive example, employee development, mentorship, engagement and clear and timely communication. Responsible for building a team that reflects diversity and supports an inclusive culture that provides opportunities for all
13. Workplace Safety:
    - Participate in workplace safety initiatives
    - Conduct/participate in formal and informal worksite safety inspections and audits
    - Report all incidents, including near misses, immediately to a supervisor
    - Wear all appropriate PPE in accordance with safe work procedures, hazard assessments, signage, or direction from a supervisor
    - Actively plan work tasks in accordance with city hazard assessment processes
    - Ensure adequate training has been received before performing any task or operating any tools and equipment
    - Comply with all city policies, work procedures, rules, safety instructions, and relevant directives in the *Alberta Occupational Health and Safety Act, Regulation and Code*
    - Report to work fit for duty and inform supervisor of any conditions which could impede their ability to safely perform work

Factor Specifications:

1. **Decision Making:**
    - Sound and well informed judgement, including managing emotions, under a variety of challenging situations, as decisions have impact on the city's operations and image
    - Manage incidents or emergencies decisively and effectively, with prompt communication to the General Manager of Community and Protective Services as they occur
    - Bring forward key variables relating to fire services which may assist in providing greater knowledge and broader decision making capacity for the General Manager of Community and Protective Services, Leadership Team, Council, and city staff
    - Working in a political environment, make quick assessments and give advice under public scrutiny, often without the opportunity for a considered review of an issue

- Ability to execute strategy, and develop and implement new programs, procedures, services, and policies that address emerging needs, expectations and operational priorities

2. **Interpersonal Skills:**
   - High level of customer service to internal and external customers
   - Establish and maintain effective internal and external communications, ensuring cooperation and coordinated provision of high quality services
   - Ability to influence Council, Leadership Team, and peers
   - Ability to accept criticism for the City or venting of the public, without reacting and fueling the conflict
   - Demonstrate high political acumen and diplomacy, particularly with Council and the public
   - High level of professionalism and ability to negotiate and/or resolve conflicts with an overall desire to deliver and achieve results
   - Well-developed interpersonal and communication skills (written, oral and presentation) to deal effectively with a diverse range of audiences
   - Ability to build collaborative partnerships with the IAFF, external agencies, other orders of government, community organizations and internal stakeholders
   - Excellent collaboration, negotiation, problem solving and conflict resolution skills, and ability to influence others
   - Model accountable leadership through the development, communication and implantation of department goals, objectives, policies, and priories for the department
3. **Supervisory Skills:**
   - Strong supervisory skills in coordinating, directing, motivating, mentoring, coaching, team building, delegating, evaluating staff and recruitment skills to ensure all department responsibilities are met in a timely and effective manner to the satisfaction of Council, Leadership Team, and internal and external customers
   - Strong leadership skills including the ability to collectively create a vision for the future, influence, persuade and gain commitment; create, support and lead by example to build a high-performance team and a positive work environment
4. **Working Conditions:**
   - Demanding office environment that requires making timely decisions, managing multiple projects and changing priorities, providing direction regarding complex or unique situations with high political profile, financial implications or community well-being
   - Accountabilities are performed in a variety of settings including the Fire Hall, emergency response locations (involving inclement weather, adverse temperatures, unpleasant odours and unsafe work sites), City Hall, other City departments, with

community groups, committees, and municipal, provincial and industrial partner agencies

- Evening and weekend work required for emergency responses and Fire Department skill maintenance training program
- Attendance, when required, at Council or committee meetings, workshops and other events which are outside of and in addition to normal office hours
- Flexibility and adaptability to change on short notice is important
- Travel to meetings, workshops, and conferences

5. **Financial:**
   - Accountable for the development, reporting and effective management of the department annual operating and capital budgets
6. **Clearances:**
   - N/A

Competency Areas:

1. **Education/Training:**
   - University Degree in the Field of Fire and Safety, Public Safety Administration, or related field
   - Recognized supervisory development training and experience
   - Certificate in Fire Management and Leadership
   - Minimum Safety Codes Officer – Fire – Inspector Level II, Investigator Level II
   - NFPA 1001 Standard Level II Fire Fighter, NFPA 1021, Fire Officer Level I, NFPA 1081 Industrial Fire Fighter
   - Incident Command System 300 is required. Incident Command System 400 and position specific training is an asset
   - Media Relations and Public Information courses
   - Safety orientation
   - WHMIS (site specific)
2. **Licenses/Certificates/Designations:**
   - Minimum Class 5 driver's license
   - Membership in a wide variety of fire service organizations, including NFPA, Canadian Association of Fire Chiefs, Alberta Fire Chief's Association, and the Fire Investigation Association of Alberta
3. **Experience/Knowledge/Skills:**
   - 10 years related professional experience, including 5+ years within a management position directing operations and activities of an IAFF municipal fire department
   - Experience with leading composite fire departments preferred
   - Extensive experience working collaboratively with the IAFF
   - Political acumen

- Understanding, appreciation and experience with municipal governance and public administration protocols
- Strong understanding and knowledge of federal, provincial, and municipal legislation, and community development relevant to effective provision of fire services
- Strong oral and written communication skills
- Strong working knowledge and understanding of emergency scene operations, management skills, legislative regulations, and safety issues within the community
- Understanding and knowledge of City of Fort Saskatchewan policies and procedures
- Understanding and knowledge of budget processes
- Understanding and knowledge of human resources processes, as relates to recruitment, hiring, disciplinary, and occupational health and safety processes
- Overall knowledge and understanding of emergency scene operations, management skills, legislative regulations, and safety issues within the community

4. **Computer Skills:**
   - Proficient in Microsoft Office including Word, PowerPoint, and Excel
   - Ability to easily learn and use financial and Fire Department related software programs (FDM record management system)
   - Geographic Information Systems (GIS)
5. **Equipment:**
   - Fire Fighting Equipment
   - Computer
   - Audio-visual equipment
   - Standard office equipment

Organizational Structure:

1. **Direct Reporting Relationships:**
   - General Manager, of Community and Protective Services
2. **Indirect Reporting Relationships:**
   - Council
   - City Manager
   - General Manager, Infrastructure and Planning
   - General Manager, Corporate Services
   - Emergency Management Alberta
3. **Interaction with External Contacts:**
   - Excellent relationships are required and must be maintained with other municipalities and agencies, federal and provincial governments, contractors, and the public

4. **Positions Reporting to This Position:**
   - Deputy Fire Chief - Operations/Training & Emergency Management
5. **In The Incumbent's Absence, Backup Support Will Be Provided By:**
   - Deputy Fire Chief – Operations/Training & Emergency Management
   - Assistant Fire Chiefs
6. **This Position Provides Backup Support To:**
   - Deputy Fire Chief – Operations/Training & Emergency Management
   - General Manager, Community and Protective Services
   - Director, Emergency Management

Job Title: Assistant Fire Chief

General Accountability:

Reporting to the Fire Chief, the assistant fire chief is a member of the fire services' leadership team and is responsible for the effective and efficient management, supervision, control, and administration of the watch. The Operations Section is the department's front line in customer service, the assistant fire chief has the utmost responsibility to ensure the watch's readiness and effective professional delivery of services and duties to the community.

Specific Accountabilities:

1. Responsible for the management, administration, quality control, analysis and reporting of all assigned watch duties, assignments, and activities. This may include, but not limited to, operational effectiveness, fire station duties, apparatus/equipment readiness, customer service requests, personnel hiring/performance/discipline, documentation/reporting/records management, and custodial services
2. Strategically develop, implement, and audit effective watch competency training programs, mentorship, and professional development in accordance with department and National Fire Protection Association standards. This shall include, but not limited to, developing training resources, being actively engaged in succession planning initiatives, supporting a positive mentorship culture and leading/developing effective competency training scenarios that examine and ensure the watch's knowledge, skills and abilities
3. In a leadership/management and safety capacity with highly proficient technical and supervisory skills, respond to and be on standby for emergency incidents in accordance with department policies, directives and protocols
4. Work cooperatively with the Planning and Logistics Section to effectively coordinate and audit watch logistics, inventories, and equipment maintenance. This may include, but not limited to, fire station assets, fleet assets, tools/equipment and personnel protective equipment
5. Responsible for scheduling personnel and maintaining watch schedule in accordance with department policies, directives, and protocols. Strategically employ staff to ensure fiscal responsibility and operational effectiveness
6. Ensure all watch staff are compliant with Occupational Health and Safety regulations and are a competent workers through the active and engaged participation in training and knowledge examinations in accordance with policies, directives, and protocols
7. Facilitate after action reviews and critical incident stress debriefings for serious, complex, and technical incidents. This may include making and implementing recommendations on department policies, directives, and protocols
8. Work cooperatively with the Planning and Logistics Section to coordinate and conduct basic fire inspections, emergency drills/exercises and pre-incident plans
9. Ensure fiscal responsibilities are met within the scope of the position

10. Develop, implement, oversee, and review the department policies, directives, and protocols
11. Undertake any other reasonable duty in order to meet service priorities and business continuity requirements
12. Municipal Emergency Management - As a member of the City's emergency management team, you may be requested to report to work to assist in the planning, response and recovery effort of a municipal emergency incident
13. Workplace Safety:
    - Participate in workplace safety initiatives
    - Conduct/participate in formal and informal worksite safety inspections and audits
    - Report all incidents, including near misses, immediately to a supervisor
    - Wear all appropriate PPE in accordance with safe work procedures, hazard assessments, signage, or direction from a supervisor
    - Actively plan work tasks in accordance with City hazard assessment processes
    - Ensure adequate training has been received before performing any task or operating any tools and equipment
    - Comply with all City policies, work procedures, rules, safety instructions, and relevant directives in the Alberta Occupational Health and Safety Act, Regulation and Code
    - Report to work fit for duty and inform supervisor of any conditions which could impede their ability to safely perform work

Factor Specifications:

1. **Decision Making:**
    - Make strategic level decisions to stabilize an emergency incident and ensure public safety
    - As a Safety Code Officer, this position will enforce provisions of the Alberta Fire Code under the authority of the Safety Codes Act
    - Acquire assets and make moderate purchases to support an incident action plan and/or crew wellness during and after an incident
2. **Interpersonal Skills:**
    - Working with others; leads and motivates others both within the fire service and community
    - Effective communication; communicates effectively both orally and in writing
    - Commitment to development; committed and able to develop members of the watch
    - Problem Solving; understands and applies relevant information to create practical solutions

- Situational awareness; maintains an active awareness of the environment to promote a safe and effective work culture

3. **Supervisory Skills:**
   - Commitment to diversity and integrity; embraces and values diversity and demonstrates a fair and ethical approach
   - Confidence and resilience; maintains a confident, controlled and focused attitude in highly challenging situations
   - Under normal, high stress and high-risk conditions, develop strategic action plans, direct and lead teams/groups to effectively, accomplish a task and meet goals and objectives
   - Staff work scheduling; administers an operational shift schedule that encompasses full-time and part-time paid-on-call staff members for both in station and standby shifts
   - Be active and engaged in peer mentorship
   - Provide classroom lecture and skill instruction, as required
   - Be an advocate for city and department policies, directives, and protocols
   - Initiate respectful crucial conversations and implement performance plans with personnel when deemed appropriate
   - Planning and implementing; creates and implements effective watch plan in line with strategic policy objectives
   - Commitment to Excellence; leads others to achieve excellence by the establishment, maintenance, and management of performance requirements
   - Openness to change; proactively supports change, adjusting approach to meet changing requirements
4. **Working Conditions:**
   - Work environment is wide ranging, from an office/shop environment at the fire station, to training and emergency incidents in outdoor environments under any environmental conditions
   - Risk and stress conditions can vary from low to high
   - Routine work will involve lifting 1 to 25 Kilograms. In training and during emergencies you may, as a team or as an individual, experience lifting objects heavier than 25 kilograms
5. **Financial:**
   - Make recommendations on things such as fleet assets, equipment, health and wellness initiatives, fire ground tactics and training programs
   - Develop operational budget requests and business cases, as required
   - Responsible for Section's associated budgets in accordance with position procurement limits and finance policies and procedures

6. **Clearances:**
    - Health evaluation (physical ability, medical evaluation, and mental health review) performed by a pre-determined medical institution in accordance with department policies, directives, and protocols
    - Criminal Records Check with vulnerable sector check

Competency Areas:

1. **Education/Training:**
    - Diploma in public/business administration, emergency services, leadership, and/or management is required
    - Supervisor Certification in topics such as conflict resolution, leadership, human resource management, communication, critical thinking, and media relations
    - Safety Orientation
    - WHMIS site specific
2. **Licenses/Certificates/Designations:**
    - International Fire Service Accreditation Congress seals in the following:
        - NFPA 1001 - Standard for Fire Fighter Professional Qualifications, Level 1, and Level 2
        - NFPA 1002 - Standard for Fire Fighter Professional Qualifications, Driver/Operator,
        - NFPA 1006 - Technical Rescue Awareness
        - NFPA 1021 - Standard for Fire Officer Professional Qualifications, Level 1, and Level 2
        - NFPA 1031 - Standard for Fire Inspector and Plan Examiner Professional Qualifications, Level 1
        - NFPA 1041 - Standard for Fire Service Instructor Professional Qualifications Level 1 and Level 2.
        - NFPA 1072 - Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents, Awareness Level and Operations Level

    Additional:
    - Alberta Class 5 Motor Vehicle Operators License, or equivalent with Air Brake Endorsement and no more than five (5) demerits
    - Alberta Safety Codes Officer – Fire Group B2
    - ICS 300
    - Blue Card Incident Commander
    - Advanced First Aid - CPR Level C – AED

3. **Experience/Knowledge/Skills:**
   - 6 years' experience working in an emergency service field
   - 5 years' experience in a supervisory role
   - Knowledge and understanding of emergency scene operations, management skills, legislative regulations, and safety issues within the community
   - Knowledge and experience in media relations
4. **Computer Skills:**
   - Knowledge in FDM Win4 and Win 6 is an asset
   - Microsoft Office Suite (Word, Excel, PowerPoint, Outlook)
   - Smart phone and tablet devices
5. **Equipment:**
   - Firefighting apparatus such as fire engines, rescue units, aerial appliances, wildland firefighting vehicles, off highway vehicles, vans, trucks, and cars
   - Firefighting equipment such as, but not limited to, ropes, harnesses, various levels of PPE, hose, nozzles, water pumps, foam appliances, fans, self-contained breathing apparatus, pneumatic tools, hydraulic tools, electrical/battery operated tools, and fuel/gas operated tools

Organizational Structure:

1. **Direct Reporting Relationships:**
   - Fire Chief
2. **Indirect Reporting Relationships:**
   - General Manager, Community and Protective Services
3. **Interaction With External Contacts:**
   - Emergency service and utility agencies
   - Mutual aid and industrial representatives
   - Schools, daycares, and community groups
   - General public
4. **Positions Reporting to This Position:**
   - Full-time and part-time paid-on-call staff for watch operations
   - Based upon an assistant fire chief's position within the command and management structure at an incident, the positions reporting to this position may vary
5. **In The Incumbent's Absence, Backup Support Will Be Provided By:**
   - Captain
6. **This Position Provides Backup Support To:**
   - None

Job Title: Deputy Fire Chief – Operations/Training & Emergency Management

General Accountability:

As the deputy fire chief, Operations/Training & Emergency Management you will be responsible for the overall leadership and management of Operations/Training and Emergency Management of Fire Services. This position develops the department's operations, professional development training program, asset and material management, planning, overseeing the emergency management program, acting as the DDEM, and incident mitigation.

Reporting to the Fire Chief, the deputy fire chief is also a member of the fire services leadership Team. Who supports and implements the vison and direction of the Fire Chief and plays a critical leadership role in achieving the department's operational goals and objectives.

Specific Accountabilities:

1. Develop, facilitate, audit, and maintain the department's operations program to ensure department's compliance with occupational health and safety, operational effectiveness, fire station duties, apparatus/equipment readiness, customer service requests, personnel hiring/performance/discipline, documentation/reporting/records management, city policies and Operations Section needs
2. Develop, facilitate, audit, and maintain department's professional development training program to ensure department's compliance with occupational health and safety, mentorship and professional development in accordance with department and NFPA standards, city policies and Training Section needs
3. Develop, facilitate, audit and maintain department's firefighter POC recruit training program including, but not limited to, hosting information sessions, application review, coordinating portions of the candidate pre-selection process, coordinating basic training program and final hiring process
4. Develop, facilitate, audit and maintain department's asset and material management program which includes, but is not limited to, preventative maintenance and testing schedules, replacement schedules, asset selection and procurement, inventory management, safe practices/protocols and vendor/contractor management
5. Develop, facilitate, audit and maintain department's planning and emergency preparedness program which includes, but is not limited to:
    - Examine, provide feedback on and, as required, approve development plans, subdivision plans, construction safety plans, special event permits, dangerous good transportation permits, and commercial/industrial and emergency response plans
    - Conduct, document, and report on incident investigations
    - Conduct preparedness planning for special events
    - Conduct and report on after action reviews
    - Department liaison with commercial and industrial businesses

- Manage and administer department related bylaws and associated fees, charges, and penalty/cost recovery procedures
- Readiness and preparedness of emergency facilities, resources, and notification systems
- Will be assigned the role of DDEM in the Emergency Management Group

6. Develop, update, and maintain emergency management program while coordinating with regional partners
    - Support the efforts of, represents the region and City. Attend Capital Region Emergency Preparedness Partnership (C-REPP) and Northeast Region Community Awareness Emergency Response (NR-CAER)
    - Coordinate all training with municipal staff
    - Provide business continuity planning and budgets to the EAC committee
    - Work with Provincial stakeholder (AEMA)
7. Develop, facilitate, audit, and maintain department's incident mitigation program which includes, but is not limited to, incident safety education, community education outreach and preparedness, incident notification systems, city drills/exercises and technical fire inspections
8. Develop, facilitate, audit and maintain all planning and logistical related documentation and records including, but not limited to, policies, directives, protocols, product warranties, manufacturer instructions, hazardous material safety data sheets and safe work procedures
9. Ensure fiscal responsibilities are met within the scope of the position; responsible for the effective management of assigned budgets which includes, but not limited to, operation and capital spending, budget development, asset replacement plans/schedules, financial reporting and grant accounting
10. On occasion, when requested, respond and or be on standby for major municipal emergency incidents in a leadership, safety, and/or advisor capacity in accordance to department policies, directives and protocols
11. Undertake any other reasonable duty in order to meet service priorities and business continuity requirements as assigned
12. Workplace Safety:
    - Participate in workplace safety initiatives
    - Conduct/participate in formal and informal worksite safety inspections and audits
    - Report all incidents, including near misses, immediately to a supervisor
    - Wear all appropriate PPE in accordance with safe work procedures, hazard assessments, signage, or direction from a supervisor
    - Actively plan work tasks in accordance with City hazard assessment processes

- Ensure adequate training has been received before performing any task or operating any tools and equipment
- Comply with all City policies, work procedures, rules, safety instructions, and relevant directives in the Alberta Occupational Health and Safety Act, Regulation and Code
- Report to work fit for duty and inform supervisor of any conditions which could impede their ability to safely perform work

Factor Specifications:

1. **Decision Making:**
   - As a Safety Codes Officer, this position will enforce provisions of the Alberta Fire Code under the authority of the Safety Codes Act
   - Determine suitable fleet and equipment lifecycle plans and preventative maintenance programs, routinely make educated judgements on replacement against repairs
   - When acting as a member of an incident management team, shall make strategic and tactical level decisions to support the stabilization of an emergency incident and ensure public safety
2. **Interpersonal Skills:**
   - Confidence and resilience; maintains a confident, controlled and focused attitude in highly challenging situations
   - Working with others; leads, involves and motivates others both within the fire service and community
   - Effective communication; communicates effectively both orally and in writing
   - Commitment to diversity and integrity; embraces and values diversity and demonstrates a fair and ethical approach
   - Openness to change; proactively supports change, adjusting approach to meet changing requirements
   - Commitment to development; committed and able to develop individuals, teams, and others
   - Problem Solving; understands and applies relevant information to create practical solutions
   - Situational awareness; maintains an active awareness of the environment to promote safe and effective working
3. **Supervisory Skills:**
   - May provide classroom lecture and skill instruction, as required
   - Planning and implementing; creates and implements effective section plans in line with strategic policy objectives
   - Commitment to Excellence; Leads others to achieve excellence by the establishment, maintenance, and management of performance requirements

- Under normal, high stress and high-risk conditions, develop strategic action plans, direct and lead teams/groups to effectively accomplish a task and meet goals and objectives
- Commitment to diversity and integrity; embraces and values diversity and demonstrates a fair and ethical approach
- Confidence and resilience; maintains a confident, controlled and focused attitude in a highly challenging situations
- Staff work scheduling; administers and operational shift schedule that encompasses full-time and part-time paid-on-call staff members for both in station and standby shifts
- Openness to change; proactively supports change, adjusting approach to meet changing requirements

4. **Working Conditions:**
   - Work environment is wide ranging, from an office/shop environment at the fire station, to training and emergency incidents in outdoor environments under any environmental conditions
   - Risk and stress conditions can vary from low to high
   - Routine work will involve lifting 1 to 25 Kilograms. In training and during emergencies you may, as a team or as an individual, experience lifting objects heavier than 25 kilograms
   - Be in good health, physical and mental condition
   - Ability to commit to an On-Call schedule for operations, emergency management and respond to emergencies 24 hours a day if needed
   - Work Day - Monday to Friday 7.5 hours a day
5. **Financial:**
   - Responsible for the management of large capital projects such as the procurement of fire apparatus, fire station systems, and emergency preparedness assets
   - Responsible for establishing and maintaining fleet/equipment lifecycle plans
   - Develop operational and capital budget requests in coordination with robust business cases
   - Responsible for Section's associated budgets in accordance with position procurement limits and finance policies and procedures
6. **Clearances:**
   - Criminal Records Check with vulnerable sector check

Competency Areas:

1. **Education/Training:**
   - Diploma in public/business administration, leadership, Fire Science, and/or management

- Degree or College diploma in Emergency Preparedness/Management
- Supervisor Certification in topics such as conflict resolution, leadership, human resource management, communication critical thinking and media relations
- An equivalent combination of skills and experience may be considered
- Safety Orientation
- WHMIS site specific

2. **Licenses/Certificates/Designations:**
   - Alberta Class 3 Motor Vehicle Operators License/Air Brake Endorsement and no more than five (5) demerits
   - NFPA 1001 - Standard Level I & II Fire Fighter
   - NFPA 1072 – Standard for Competence of Responders to Hazardous Materials
   - NFPA 1021 - Fire Officer Level II
   - NFPA 1033 - Fire Investigator
   - NFPA 1031 – Level 2
   - NFPA 1521 - Incident Safety Officer
   - NFPA 1041 - Level II Fire Instructor
   - NFPA 1002 - Apparatus/Arial/ Operator/Pump
   - NFPA 1006 - Vehicle Ex/Technical Rescue
   - Standard First Aid / CPR Level C HPC
   - ICS 400
   - Basic Emergency Management (BEM)
   - Director of Emergency Management (DEM)

Additional:

- Blue Card Commander as required

3. **Experience/Knowledge/Skills:**
   - 7 years' experience working in an emergency services
   - 5 years' experience in a supervisory/leadership role
   - Knowledge and understanding of municipal emergency management, supply chain management, vendor management, occupational health and safety, municipal procurement practices, management skills, negotiation skills, and legislative regulations
   - Knowledge and experience in media relations
4. **Computer Skills:**
   - Proficient in Aptean FDM Win4 and FDM Win 6
   - Proficient in Microsoft Office Suite (Word, Excel, PowerPoint, Outlook)
   - Proficient with smart phone and tablet devices

5. **Equipment:**
    - Firefighting apparatus such as a fire engines, rescue units, aerial appliances, wildland firefighting vehicles, off highway vehicles, vans, trucks, and cars
    - Firefighting equipment such as, but not limited to, ropes, harnesses, various level of personal protective equipment, hose, nozzles, water pumps, foam appliances, fans, self-contained breathing apparatus, pneumatic tools, hydraulic tools, electrical/battery operated tools, and fuel/gas operated tools

Organizational Structure:

1. **Direct Reporting Relationships:**
    - Fire Chief
2. **Indirect Reporting Relationships:**
    - General Manager, Community and Protective Services
    - City Manager
3. **Interaction With External Contacts:**
    - Emergency service, public safety, and utility agencies
    - Mutual aid and industrial representatives
    - Schools, daycares, and community groups
    - General public
4. **Positions Reporting To This Position:**
    - AFC
    - Clerk II – Fire Service
    - Logistics Technician
    - Based upon a deputy fire chief's position within the command and management structure at an incident scene, the positions reporting to this position may vary.
5. **In The Incumbent's Absence, Backup Support Will Be Provided By:**
    - Fire Chief
6. **This Position Provides Backup Support To:**
    - Fire Chief

Job Title: Captain

General Accountability:

Reporting to the Assistant Fire Chief, the captain is a leadership position within a watch who leads and manages a crew of engineers and firefighters assigned to a single fire apparatus and is responsible for the readiness and professional delivery of services and duties to the community.

Specific Accountabilities:

1. Responsible to lead and ensure the accurate and efficient completion of all assigned crew duties, assignments, tasks, activities, or projects. This may include, but not limited to, fire station duties, apparatus/equipment readiness checks, personal protective equipment checks, customer service requests, incident prevention, documentation/reporting/records management, workplace health/welfare/safety initiatives and custodial services
2. Lead, supervise and ensure effective watch competency training programs/drills, mentorship, and professional development in accordance with department and National Fire Protection Association standards. This shall include, but not limited to, developing training lectures and presentations, being actively engaged in succession planning initiatives, and leading effective competency training drills through practical hands-on and lecture style classroom training sessions. Routinely test and evaluate staff competency
3. In a leadership capacity with highly proficient technical and supervisory skills, respond to and be on standby for emergency incidents in accordance with department policies, directives, and protocols. Routinely act as an initial incident commander or safety officer, and occasionally act as a second level commander
4. Responsible to lead and for the quality control of the crew's effective and efficient employment of tactics and tasks at an incident in accordance with the incident action plan
5. As a Safety Codes Officer, lead a crew in conducting basic fire and life-safety inspections on assembly, commercial and industrial occupancies. As a crew manager, take part in emergency drills/exercises and pre-incident planning activities
6. Complete operational documents, reports, and forms to department standards
7. Ensure crew staff are compliant with Occupational Health and Safety regulations and are competent through the active and engaged participation in training and knowledge examinations in accordance with department and city policies, directives, and protocols
8. Facilitate after action reviews and critical incident stress debriefings for routine and/or moderate size incidents. This may include making recommendations on department policies, directives, and procedures
9. Undertake any other reasonable duty in order to meet service priorities and business continuity requirements

10. Municipal Emergency Management - As a member of the City's emergency management team, you may be requested to report to work to assist in the planning, response, and recovery effort of a municipal emergency incident
11. **Workplace Safety:**
    - Participate in workplace safety initiatives
    - Conduct/participate in formal and informal worksite safety inspections and audits
    - Report all incidents, including near misses, immediately to a supervisor
    - Wear all appropriate PPE in accordance with safe work procedures, hazard assessments, signage, or direction from a supervisor
    - Actively plan work tasks in accordance with City hazard assessment processes
    - Ensure adequate training has been received before performing any task or operating any tools and equipment
    - Comply with all City policies, work procedures, rules, safety instructions, and relevant directives in the Alberta Occupational Health and Safety Act, Regulation and Code
    - Report to work fit for duty and inform supervisor of any conditions which could impede their ability to safely perform work

Factor Specifications:

1. **Decision Making:**
    - Make strategic and tactical level decisions to stabilize an emergency incident and ensure public safety
    - As a Safety Code Officer, this position will enforce provisions of the Alberta Fire Code under the authority of the Safety Codes Act
    - Acquire assets and make moderate purchases to support an incident action plan and/or crew wellness during and after an incident
2. **Interpersonal Skills:**
    - Working with others; leads and motivates others while on-shift and at an incident scene
    - Effective communication; communicates effectively both orally and in writing
    - Commitment to development; committed and able to develop members within the crew
    - Problem Solving; understands and applies relevant information to create practical solutions for challenging technical and/or task related problems
    - Situational awareness; maintains an active awareness of the environment to promote safe and effective work culture
3. **Supervisory Skills:**
    - Confidence and resilience; maintains a confident, controlled, and focused attitude in highly challenging situations

- Under normal, high stress and high-risk conditions, develop strategic action plans, direct and lead teams/groups to effectively, accomplish a task and meet goals and objectives
- Commitment to diversity and integrity; embraces and values diversity and demonstrates a fair and ethical approach
- Be active and engaged in peer mentorship
- Routinely provide classroom lecture and skill instruction
- Planning and implementing; implements and modify shift plans, as required
- Commitment to Excellence; lead crew in performance of duties
- Openness to change; proactively supports change, adjusting approach to meet changing requirements

4. **Working Conditions:**
   - Work environment is wide ranging, from an office/shop environment at the fire station, to training and emergency incidents in outdoor environments under any environmental conditions
   - Risk and stress conditions can vary from low to high
   - Routine work will involve lifting 1 to 25 Kilograms. In training and during emergencies you may, as a team or as an individual, experience lifting objects heavier than 25 kilograms
5. **Financial:**
   - May be appointed as a member of a committee that makes recommendations on things such as fleet assets, equipment, health and wellness initiatives, fire ground tactics and training programs
   - May assist in the development of an operational budget request
   - Responsible for Section's associated budgets in accordance with position procurement limits and finance policies and procedures
6. **Clearances:**
   - Annual Health evaluation (physical ability, medical evaluation, and mental health review) performed by a pre-determined medical institution in accordance with department policies, directives, and protocols
   - Criminal Records Check with vulnerable sector check

Competency Areas:

1. **Education/Training:**
   - High School Diploma
   - Post-secondary education in emergency services as specified in Licenses/Certificates/Designations
   - Supervisor Certification
   - Media relations is preferred

- Safety Orientation
- WHMIS site specific

2. **Licenses/Certificates/Designations:**
   - International Fire Service Accreditation Congress seals in the following:
     - NFPA 1001 - Standard for Fire Fighter Professional Qualifications
       - Level 1
       - Level 2
     - NFPA 1002 - Standard for Fire Fighter Professional Qualifications
       - Driver/Operator
       - Pump Operator
       - Aerial Apparatus
     - NFPA 1006 - Technical Rescue Awareness
     - NFPA 1021 - Standard for Fire Officer Professional Qualifications, Level 1
     - NFPA 1031 - Standard for Fire Inspector and Plan Examiner Professional Qualifications, Level 1
     - NFPA 1041 - Standard for Fire Service Instructor Professional Qualifications, Level 1
     - NFPA 1072 - Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents
       - Awareness
       - Operations Level

   Additional:
   - Alberta Class 3 Motor Vehicle Operators License and Air Brake Endorsement
   - Driver's Abstract with no more than five (5) demerits
   - Alberta Safety Codes Officer – Fire Group B1
   - ICS 300
   - Blue Card Incident Commander
   - Advanced First Aid - CPR Level C – AED
3. **Experience/Knowledge/Skills:**
   - 4-6 years' experience working in an emergency service field
   - 3 years' experience in a supervisory role
   - Knowledge and understanding of emergency scene operations, fire apparatus operations, management skills, legislative regulations, media relations and safety issues within the community
4. **Computer Skills:**
   - Knowledge in FDM Win4 and Win 6 is an asset

- Proficient in Microsoft Office Suite (Word, Excel, PowerPoint, Outlook)
- Proficient with smart phone and tablet devices

5. **Equipment:**
   - Firefighting apparatus such as fire engines, rescue units, aerial appliances, wildland firefighting vehicles, off highway vehicles, vans, trucks, and cars
   - Firefighting equipment such as, but not limited to, ropes, harnesses, various levels of personal protective equipment, hose, nozzles, water pumps, foam appliances, fans, self-contained breathing apparatus, pneumatic tools, hydraulic tools, electrical/battery operated tools, and fuel/gas operated tools

Organizational Structure:

1. **Direct Reporting Relationships:**
   - Assistant Fire Chief
2. **Indirect Reporting Relationships:**
   - Fire Chief
   - Deputy Fire Chief, Planning and Logistics
3. **Interaction With External Contacts:**
   - Emergency service and utility agencies
   - Mutual aid and industrial representatives
   - Schools, daycares, and community groups
   - General public
4. **Positions Reporting To This Position:**
   - Engineer and Firefighters for shift operations
   - Based upon a captain's position within the command and management structure at an incident scene, the positions reporting to this position may vary
5. **In The Incumbent's Absence, Backup Support Will Be Provided By:**
   - Captain
   - Engineer
6. **This Position Provides Backup Support To:**
   - Assistant Fire Chief
   - Captain

Job Title: Engineer

General Accountability:

Reporting to the Assistant Fire Chief, the engineer is primarily responsible for the safe and efficient operation of firefighting apparatus in response to emergencies, and for pumpers, ladder trucks, and other special firefighting apparatus at the emergency scene. An engineer is assigned to a watch and is responsible for an assigned apparatus' readiness and professional delivery of services and duties.

Specific Accountabilities:

1. Safely drive and operate various types of fire apparatus and their specialized systems under highly stressful emergency conditions. This may include but not limited to, driving large heavy fire apparatus in emergency mode, operating fire pumps and foam systems, operating aerial ladder devices and vehicle stabilization systems, and operate a variety of hand or remote controlled fire suppression and scene lighting appliances
2. Responsible for the accurate and efficient completion of assigned crew duties, assignments, tasks, activities, or projects. This may include, but not limited to, fire station duties, apparatus/equipment readiness checks, personal protective equipment checks, customer service requests, incident prevention, documentation/reporting/records management, workplace health/welfare/safety initiatives and custodial services
3. Within a crew, actively participate in basic fire and life-safety inspections, emergency drills/exercises and pre-incident planning activities
4. Respond to and be on standby for emergency incidents in accordance with department directives and protocols
5. Effective and efficient employment of tactics and tasks at an incident in accordance with the incident action plan
6. Complete operational documents, reports, and forms to department standards, as assigned
7. Be active and engaged in after action reviews and critical incident stress debriefings
8. Undertake any other reasonable duty in order to meet service priorities and business continuity requirements
9. Municipal Emergency Management - As a member of the City's emergency management team, you may be requested to report to work to assist in the planning, response and recovery effort of a municipal emergency incident
10. Workplace Safety:
    - Participate in workplace safety initiatives
    - Conduct/participate in formal and informal worksite safety inspections and audits
    - Report all incidents, including near misses, immediately to a supervisor

- Wear all appropriate PPE in accordance with safe work procedures, hazard assessments, signage, or direction from a supervisor
- Actively plan work tasks in accordance with City hazard assessment processes
- Ensure adequate training has been received before performing any task or operating any tools and equipment
- Comply with all City policies, work procedures, rules, safety instructions, and relevant directives in the Alberta Occupational Health and Safety Act, Regulation and Code
- Report to work fit for duty and inform supervisor of any conditions which could impede their ability to safely perform work

Factor Specifications:

1. **Decision Making:**
   - Fire apparatus operation requires constant alertness, observation, and judgement to ensure the safe operational limits are upheld
   - Make tactical level decisions to stabilize an emergency incident and ensure public safety
   - Proper, effective, and professional delivery of customer relations as a front-line staff member
   - Confidence and resilience; maintains a confident, controlled, and focused attitude in highly challenging situations
2. **Interpersonal Skills:**
   - Effective communication; communicates effectively both orally and in writing
   - Situational awareness; maintains an active awareness of the environment to promote safe and effective working
3. **Supervisory Skills:**
   - N/A
4. **Working Conditions:**
   - Work environment is wide ranging, from an office/shop environment at the fire station, to training and emergency incidents in outdoor environments under any environmental conditions
   - Risk and stress conditions can vary from low to high
   - Routine work will involve lifting 1 to 25 Kilograms. In training and during emergencies you may, as a team or as an individual, experience lifting objects heavier than 25 kilograms
5. **Financial:**
   - May be appointed as a member of a committee that makes recommendations on things such as fleet assets, equipment, health and wellness initiatives, fire ground tactics and training programs

6. **Clearances:**
    - Health evaluation (physical ability, medical evaluation, and mental health review) performed by a pre-determined medical institution in accordance with department policies, directives, and protocols
    - Criminal Records Check with vulnerable sector check

Competency Areas:

1. **Education/Training:**
    - High School Diploma
    - Post-secondary education in emergency services as specified in Licenses/Certificates/Designations
    - Safety Orientation
    - WHMIS site specific
2. **Licenses/Certificates/Designations:**
    - International Fire Service Accreditation Congress seals in the following:
        - NFPA 1001 - Standard for Fire Fighter Professional Qualifications
            - Level 1
            - Level 2
        - NFPA 1002 - Standard for Fire Fighter Professional Qualifications
            - Driver/Operator
            - Pump Operator
            - Aerial Apparatus
        - NFPA 1006 - Technical Rescue Awareness
        - NFPA 1072 - Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents
            - Awareness Level
            - Operations Level

    Additional:
    - Alberta Class 3 Motor Vehicle Operators License and Air Brake Endorsement
    - Driver's Abstract with no more than five (5) demerits.
    - ICS 200
    - Blue Card Incident Commander
    - Advanced First Aid - CPR Level C – AED
3. **Experience/Knowledge/Skills:**
    - 2-3 years' experience working in an emergency service field
    - Proficient knowledge required in:
        - design, limitations, use and maintenance of fire apparatus and equipment

- geography of the City and the department's response area
- location of water main and fire hydrants in the City
- safety methods and precautions involved in the operation of fire apparatus and vehicles; federal, provincial, and local laws and regulations governing the operation of fire apparatus and vehicles on public roads and rights-of-way
- principles, methods and techniques of fire suppression and prevention
- principles of mathematics, water hydraulics, physics, chemistry and mechanics as they apply to the use of fire apparatus and fire suppression

4. **Computer Skills:**
   - Basic knowledge in Microsoft Office Suite (Word, Excel, PowerPoint, Outlook)
   - Proficient with smart phone and tablet devices
5. **Equipment:**
   - Firefighting apparatus such as fire engines, rescue units, aerial appliances, wildland firefighting vehicles, off highway vehicles, vans, trucks, and cars
   - Firefighting equipment such as, but not limited to, ropes, harnesses, various levels of personal protective equipment, hose, nozzles, water pumps, foam appliances, fans, self-contained breathing apparatus, pneumatic tools, hydraulic tools, electrical/battery operated tools, and fuel/gas operated tools

Organizational Structure:

1. **Direct Reporting Relationships:**
   - Assistant Fire Chief for watch operations
   - Captain for shift operations
2. **Indirect Reporting Relationships:**
   - Fire Chief
3. **Interaction With External Contacts:**
   - Emergency service and utility agencies
   - Mutual aid and industrial representatives
   - Schools, daycares, and community groups
   - General public
4. **Positions Reporting To This Position:**
   - Based upon an Engineer's position within the command and management structure at an incident scene, the positions reporting to this position may vary
5. **In The Incumbent's Absence, Backup Support Will Be Provided By:**
   - Engineer
6. **This Position Provides Backup Support To:**
   - Captain
   - Engineer

Job Title: Firefighter

General Accountability:

Reporting to the Assistant Fire Chief, the firefighter is a first responder who routinely responds to and works at incidents such as, but not limited to, fires, medical incidents, MVCs, alarm calls, hazardous materials spills or leaks, water incidents, technical rescues, and rail incidents. A firefighter is assigned to a watch and is responsible for the professional delivery of services and duties.

For a firefighter's prompt attendance to the fire station in a significant unscheduled emergency and/or while on standby, a firefighter must reside within the defined geographical area as per the attached map.

Specific Accountabilities:

1. Respond to and be on standby for emergency incidents in accordance with department directives and protocols
2. Responsible for the accurate and efficient completion of assigned crew duties, assignments, tasks, activities, or projects. This may include, but not limited to, fire station duties, apparatus/equipment readiness checks, personal protective equipment checks, customer service requests, incident prevention, documentation/reporting/records management, workplace health/welfare/safety initiatives and custodial services
3. Effective and efficient employment of tactics and tasks at an incident in accordance with the incident action plan
4. Within a crew, actively participate in basic fire and life-safety inspections, emergency drills/exercises and pre-incident planning activities
5. Be active and engaged in after action reviews and critical incident stress debriefings
6. Undertake any other reasonable duty in order to meet service priorities and business continuity requirements
7. Workplace Safety:
    - Participate in workplace safety initiatives
    - Conduct/participate in formal and informal worksite safety inspections and audits
    - Report all incidents, including near misses, immediately to a supervisor
    - Wear all appropriate PPE in accordance with safe work procedures, hazard assessments, signage, or direction from a supervisor
    - Actively plan work tasks in accordance with City hazard assessment processes
    - Ensure adequate training has been received before performing any task or operating any tools and equipment
    - Comply with all City policies, work procedures, rules, safety instructions, and relevant directives in the Alberta Occupational Health and Safety Act, Regulation and Code

- Report to work fit for duty and inform supervisor of any conditions which could Impede Their Ability To Safely Perform Work

Factor Specifications:

1. **Decision Making:**
   - Make tactical level decisions to stabilize an emergency incident and ensure public safety
   - Proper, effective, and professional delivery of customer relations as a front-line staff member
2. **Interpersonal Skills:**
   - Effective communication; communicates effectively
   - Situational awareness; maintains an active awareness of the environment to promote safe and effective working
   - Confidence and resilience; maintains a confident, controlled and focused attitude in highly challenging situations
3. **Supervisory Skills:**
   - N/A
4. **Working Conditions:**
   - Work environment is wide ranging, from an office/shop environment at the fire station, to training and emergency incidents in outdoor environments under any environmental conditions
   - Risk and stress conditions can vary from low to high
   - Routine work will involve lifting 1 to 25 Kilograms. In training and during emergencies you may, as a team or as an individual, experience lifting objects heavier than 25 kilograms
5. **Financial:**
   - May be appointed as a member of a committee that makes recommendations on things such as fleet assets, equipment, health and wellness initiatives, fire ground tactics and training programs
6. **Clearances:**
   - Firefighters must live within the defined geographical area as per attached map
   - Health evaluation (physical ability, medical evaluation, and mental health review) performed by a pre-determined medical institution in accordance with department policies, directives, and protocols
   - Criminal Records Check with vulnerable sector check

Competency Areas

6. **Education/Training:**
   - High School Diploma
   - Safety Orientation

- WHMIS Site Specific

7. **Licenses/Certificates/Designations:**
   - This position has a progression level based on certification

   Recruit Firefighter (Entry Level)

   - Alberta Class 5 Motor Vehicle Operators License and no more than five (5) demerits

   Third Class Firefighter (Minimum Operations Level)

   - Meets all requirements of the lower class
   - International Fire Service Accreditation Congress seals in the following:
     - NFPA 1001 - Standard for Fire Fighter Professional Qualifications, Level 1
     - NFPA 1072 - Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents Awareness Level
     - NFPA 1072 - Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents Operations Level

   Additional:

   - Standard First Aid
   - CPR Level C – AED

   Second Class Firefighter (Intermediate Operations Level)

   - Meets all requirements of the lower classes
   - International Fire Service Accreditation Congress seals in the following:
     - NFPA 1001 - Standard for Fire Fighter Professional Qualifications, Level 2

   Additional:

   - ICS100

   First Class Firefighter (Highest Operations Level)

   - Meets all requirements of the lower classes.
   - International Fire Service Accreditation Congress seals in the following:
     - NFPA 1006 - Technical Rescue Awareness

   Additional:

   - ICS 200

8. **Experience/Knowledge/Skills:**

   Recruit Firefighter (Entry Level) has

   - N/A

   Third Class Firefighter (Minimum Operations Level)

   - 6 months experience with the City of Fort Saskatchewan fire service. Knowledge and skills will be evaluated

   Second Class Firefighter (Intermediate Operations Level)

- 2 years experience with the City of Fort Saskatchewan fire service. Knowledge and skills will be evaluated

First Class Firefighter (Highest Operations Level)

- 3 years experience with the City of Fort Saskatchewan fire service. Knowledge and skills will be evaluated.

9. **Computer Skills:**
   - Proficient with smart phone and tablet devices
10. **Equipment:**
    - Firefighting apparatus such as fire engines, rescue units, aerial appliances, wildland firefighting vehicles, off highway vehicles, vans, trucks, and cars
    - Firefighting equipment such as, but not limited to, ropes, harnesses, various levels of personal protective equipment, hose, nozzles, water pumps, foam appliances, fans, self-contained breathing apparatus, pneumatic tools, hydraulic tools, electrical/battery operated tools, and fuel/gas operated tools

Organizational Structure:

1. **Direct Reporting Relationships:**
   - Assistant Fire Chief for watch operations
   - Captain for shift operations
2. **Indirect Reporting Relationships:**
   - Fire Chief
3. **Interaction With External Contacts:**
   - Emergency Service and Utility Agencies
   - Mutual Aid and Industrial Representatives
   - Schools, Daycares and Community Groups
   - General Public
4. **Positions Reporting To This Position:**
   - Based upon a firefighter's position within the command and management structure at an incident scene, the positions reporting to this position may vary.
5. **In The Incumbent's Absence, Backup Support Will Be Provided By:**
   - Firefighter
6. **This Position Provides Backup Support To:**
   - Firefighter

Job Title: Clerk II – Fire Services

General Accountability:

Reporting to the Deputy Fire Chief-Operations/Training & Emergency Management, the Clerk II provides essential administrative clerical support and coordination to the deputy chief, Fire Chief and Assistant Deputy Chief's within Fire Services Department.

Specific Accountabilities:

1. Provide clerical support, this may include, but is not limited to:
    - Provide excellent customer service by answering the phones as the first point of contact
    - Provide information, advice, and options to residents, stakeholders, and other city departments
    - Schedule and setup event/training spaces and order/obtain sustenance
    - Send out event/training notifications and maintain enrollment and class rosters
    - Arranging vendors and contractors to conduct training activities
    - Book travel/accommodations for staff
    - Research and edit documents such as safe work practices and department protocols
    - Working with external clients, preparing and coordinate department permit applications
    - Research and complete grant applications
    - Attend meetings, provide agendas, and record meeting minutes as required
    - Booking and scheduling events
    - Generate and process invoices
    - Monitor and distribute Fort Report requests
2. Provide support for the asset and material management program which includes, but is not limited to:
    - Order/receive assets and materials
    - Obtain quotes and create purchasing orders
    - Schedule contractors and maintenance/repair work
    - Maintaining asset preventative maintenance, testing and replacement schedules
    - Primary department contact and liaison to the City's fleet and facilities department
    - Primary department contact for shipping and receiving
    - Operate city vehicles to conduct asset/equipment pickups and deliveries dropping off and picking up vehicles for service/repairs
    - Maintain consumable inventory which may include such things as office supplies, medical supplies, and personal protective equipment/uniforms

- Arrange, audit and maintain asset/equipment related documentation and records including, but not limited to, product warranties, manufacturer instructions, hazardous material safety data sheets
- Work with vendors and contractors to ensure compliance with the City Occupational Health and Safety requirements

3. Provide clerical support for the planning and preparedness program which includes, but is not limited to:
   - Maintain and update information within FDM's properties module such as updating business names, contact information, hazardous material inventories and fire protection systems
   - Maintain and update information within FDM's permit module such as entering permitted construction safety plans and dangerous goods transportation permits
   - Coordinate the collection, access and storage of industrial emergency response plans and annually update/verify city's emergency contact information with plan representatives
   - Collect and assemble files and documents to file incident investigations
   - Collect and assemble files and documents for department FOIP requests
   - Maintain city employee contact list on Everbridge alert system
   - Special event planning support
   - Manage information within Active 911 such as fire hydrant status and road closures
4. Maintain and update information in the personnel and training modules within the department's record management system. This may include but not limited to maintaining and updating personnel certifications and training courses.
5. Other related duties as required.
6. Workplace Safety:
   - Participate in workplace safety initiatives
   - Conduct/participate in formal and informal worksite safety inspections and audits
   - Report all incidents, including near misses, immediately to a supervisor
   - Wear all appropriate PPE in accordance with safe work procedures, hazard assessments, signage, or direction from a supervisor
   - Actively plan work tasks in accordance with City hazard assessment processes
   - Ensure adequate training has been received before performing any task or operating any tools and equipment
   - Comply with all City policies, work procedures, rules, safety instructions, and relevant directives in the Alberta Occupational Health and Safety Act, Regulation and Code

- Report to work fit for duty and inform supervisor of any conditions which could impede their ability to safely perform work

Factor Specifications:

1. **Decision Making:**
   - Prioritize workloads
   - Make recommendations on replacement against repairs
2. **Interpersonal Skills:**
   - Communicate verbally and in writing to clients, vendors, suppliers, and internal city staff. Prompt response to issues and appropriate resolutions of problems, working in tandem with other departments, business units, vendors, and contractors
   - Situational awareness; maintains an active awareness of the fire station environment to promote safe and effective working
3. **Supervisory Skills:**
   - N/A
4. **Working Conditions:**
   - Work environment is an office/shop environment at the fire station
   - Must be prepared to be flexible and work according to the tasks as they occur
   - May involve lifting 1 to 25 Kilograms
5. **Financial:**
   - Responsible for the consumable inventory and ordering approved equipment requests within associated budgets in accordance with position procurement limits and finance policies and procedures
6. **Clearances:**
   - N/A

Competency Areas:

1. **Education/Training:**
   - High School Diploma
   - Safety Orientation
   - WHMIS site specific
2. **Licenses/Certificates/Designations:**
   - Post-secondary education in business administration or related field is an asset
3. **Experience/Knowledge/Skills:**
   - Minimum 2 years' experience in office administration, office environment
   - Experience in emergency management and/or supply chain or materials management is an asset
   - Knowledge and understanding of asset management, vendor management and freedom of information and protection of privacy is an asset.

- Highly organized, with ability to multitask and prioritize

4. **Computer Skills:**
   - Proficient in Microsoft Office Suite (Word, Excel, PowerPoint, Outlook) at an intermediate level
   - Knowledge of FDM Win4 and FDM Win 6 is an asset.
5. **Equipment:**
   - Hand-held portable radios and iOS tablet devices
   - Office information technology equipment such as computers, copiers, projectors, and other audio-visual equipment.

Organizational Structure:

1. **Direct Reporting Relationships:**
   - Deputy Fire Chief – Operations/Training & Emergency Management
2. **Indirect Reporting Relationships:**
   - Fire Chief
   - Assistant Fire Chief's
3. **Interaction with External Contacts:**
   - Emergency service, public safety, and utility agencies
   - Mutual aid and industrial representatives
   - Vendors, suppliers, and contractors
   - On occasion the General public
4. **Positions Reporting to This Position:**
   - N/A
5. **In The Incumbent's Absence, Backup Support Will Be Provided By:**
   - N/A
6. **This Position Provides Backup Support To:**
   - N/A

Appendix F: Apparatus and Light Duty Vehicles

Unit Number:	**160-L1**	Unit Number:	**160-P9**
Year/Make:	**2008 - Smeal**	Year/Make:	**2002 - Superior**
Type:	Aerial apparatus	Type:	Pumper
Odometer (kms.):	25742	Odometer (kms.):	44946
Pump Capacity:	7000 LPM	Pump Capacity:	6000 LPM
Tank Capacity: (Water)	1170 L	Tank Capacity: (water)	500 Gallon
Foam Capacity:	50 Gallons	Foam Capacity:	No on-board foam system
Delivery Method:	Advantus	Delivery Method:	Educators
Usage:	Front-line support engine for commercial, alarms, fires, and high occupancy buildings.	Usage:	Mechanical back up Support engine for alarms, fires, MVC's, medical calls etc.
Comments:		Comments:	Failed pump test last two years

			
Unit Number:	**160-2**	Unit Number:	**160-1**
Year/Make:	**2015 Ford F-550**	Year/Make:	**2015 Ram 1500**
Type:	Brush Truck	Type:	Command Vehicle
Odometer (kms.):	3578	Odometer (kms.):	48778
Pump Capacity:	30 GPM?	Pump Capacity:	N/A
Tank Capacity: (Water)	1136 L	Tank Capacity: (water)	N/A
Foam Capacity:	76 L	Foam Capacity:	N/A
Delivery Method:	Scotty 4171	Delivery Method:	N/A
Usage:	Front-line support truck for wildland outside fires, mutual aid calls etc.	Usage:	Front-line support command vehicle.
Comments:		Comments:	

			
Unit Number:	**160-3**	Unit Number:	**160-BT**
Year/Make:	**2015-Ford F-350**	Year/Make:	**2008 Harbercraft 1875 Whitewater**
Type:	Command Truck	Type:	Rescue Boat
Odometer (kms.):	43612	Odometer (kms.):	129 Hours
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:	Front-line support command vehicle.	Usage:	Front-line support for water rescue calls.
Comments:		Comments:	

Unit Number:	**160-4**
Year/Make:	**2018 Ford Transit**
Type:	Support Unit
Odometer (kms.):	10926
Pump Capacity:	N/A
Tank Capacity: (water)	N/A
Foam Capacity:	N/A
Delivery Method:	N/A
Usage:	Front-line support vehicle.
Comments:	

			
Unit Number:	**EM Trailer**	Unit Number:	**Bickle Trailer**
Year/Make:	**2016 CJay Trailer**	Year/Make:	**2010 Well Cargo**
Type:	Emergency Management	Type:	Community Events
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:	Front-line support trailer for emergency incidents and training.	Usage:	The store the Bickle truck as for use at community events
Comments:		Comments:	

Unit Number:	**Bickle**
Year/Make:	**1929 Ford Bickle**
Type:	Restored antique
Odometer (kms.):	N/A
Pump Capacity:	N/A
Tank Capacity: (Water)	N/A
Foam Capacity:	N/A
Delivery Method:	N/A
Usage:	Truck used for parades and community events
Comments:	