

Fire Master Plan

2021



REGINA

City of Regina Policy

Title	Fire Master Plan
Policy Tracking #	This is the number that you will get from the City Clerk's Office to identify your policy document.
Version	Final draft for input, October 2020
Link to the Official Community Plan	<p>This fire master plan (FMP) provides further policy direction on the following Official Community Plan Goals:</p> <p>Financial Policies</p> <ul style="list-style-type: none"> • Goal 1 Financial Principles: Use a consistent approach to funding the operation of the City of Regina. • Goal 2 Sustainable Services and Amenities: Ensure that City of Regina services and amenities are financially sustainable. • Goal 3 Financial Planning-Ensure the sustainability of the City by understanding and planning for the full cost of capital investments, programs and services in advance of development approval and capital procurement. • Goal 4 Revenue Sources: Ensure revenue growth and sustainability. <p>Growth Plan</p> <ul style="list-style-type: none"> • Goal 1 Long Term Growth: Ensure that sufficient developable land is protected for future city growth. • Goal 4 New Neighbourhoods and Employment Areas: Ensure that new neighbourhoods and employment areas maximize infrastructure investments and quality of life through a compact and integrated built form. <p>Community Priorities</p> <ul style="list-style-type: none"> • Goal 1 Support Regional Growth: Support a more sustainable and beneficial approach to

	<p>growth within the region through collaborative regional planning and service delivery.</p> <ul style="list-style-type: none"> • Goal 3 Joint Planning Area: Promote sustainable growth and development patterns for the City with the Rural Municipality of Sherwood (RM) through effective joint planning. • Goal 4 Resiliency: Build a resilient city and minimize Regina's contributions to climate change. <p>Infrastructure</p> <ul style="list-style-type: none"> • Goal 1 Safe and Efficient Infrastructure: Meet regulatory requirements and industry best practices for design, construction, and operation of infrastructure. • Goal 2 Asset Management and Service Levels: Ensure infrastructure decisions result in long-term sustainability. • Goal 3 Planned Infrastructure: The infrastructure needed for growth will be planned from a long-term perspective. <p>Land Use and Built Environment</p> <ul style="list-style-type: none"> • Goal 1 Complete Neighbourhoods: Enable the development of complete neighbourhoods. • Goal 6 Built Form and Urban Design: Build a beautiful Regina through quality design of its neighbourhoods, public spaces and buildings. <p>Housing</p> <ul style="list-style-type: none"> • Goal 5 Collaboration with Partners: Collaborate with all levels of government and community. <p>Health & Safety</p> <ul style="list-style-type: none"> • Goal 1 Safety and Urban Planning: Improve overall health of the public through urban planning. • Goal 2 Health and Environmental Impacts: Minimize social and environmental impacts and improve the health and safety of the city and region. <p>Social Development</p> <ul style="list-style-type: none"> • Goal 1 Social Sustainability: Promote and enhance social sustainability by recognizing that
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	<p>quality of life in a community depends on both its physical and community resources.</p> <ul style="list-style-type: none"> • Goal 5 Social Inclusion: Ensure that Regina is socially inclusive and strives for social equality regardless of age, ethnicity, religion, income, sexual orientation, ability or family structure. <p>Realizing the Plan</p> <ul style="list-style-type: none"> • Goal 1 Plan Ownership: Foster Plan ownership and execution by City staff and Council. • Goal 2 Community Engagement: Support community engagement to build ownership of the Plan. • Goal 3 A Living Plan: Ensure the Plan remains current and relevant over its life. • Goal 4 Monitoring and Tracking Success: Ensure the goals and policies of this Plan are realized. • Goal 5 Phasing and Financing of Growth: Support orderly and sustainable long-term growth. • Goal 7 Zoning Bylaw Compliance: Ensure that the Zoning Bylaw facilitates development in accordance with the goals and policies of this Plan.
Service Level Definition	<p>This FMP provides further policy direction on the following City of Regina services:</p> <ul style="list-style-type: none"> • Fire & Protective Services
Policy Owner	Fire Chief
Next Scheduled Review	This should be consistent with the information in the implementation section of the FMP

Acknowledgements

Emergency Management & Training Inc (EMT) would like to thank the public and numerous community stakeholders that were involved in providing valuable feedback for the development of this Fire Master Plan (FMP). The public and stakeholder consultations were well attended and very successful in terms of relevant feedback and visionary thinking for the future growth of services by the Regina Fire & Protective Services (RFPS). Several recommendations provided in this FMP were a result of discussions during public and stakeholder consultations.

Additionally, EMT wishes to thank all the staff of RFPS for their time, expertise, and feedback through meetings, interviews, and questionnaires. The administrative team and members of the International Association of Fire Fighters (IAFF) 181 contributed positively and provided key information for this FMP through the numerous meetings and questionnaires. Thanks to the Executive Leadership Team for offering suggestions for strategic implementation.



Message from the Fire Chief

I'm pleased to present the Fire Master Plan (FMP) as a blueprint for decisionmaking and a guide to help position fire service for community and economic growth over the next 25 years. The FMP includes a comprehensive community risk assessment, research on best practices from other municipalities, and input from key internal and external stakeholders. Our goal was to develop a long-range plan that identifies the Department's future needs to keep Regina safe.

Regina Fire & Protective Services (RFPS) has served Regina and the surrounding communities as a 24/7 allhazards emergency response agency since its inception in 1882. In addition to fighting fires, our highly trained and skilled workforce responds to hazardous materials, water/ice rescue, rope or confined space rescue, jaws of life calls, and emergency medical response, including needle pick-ups. This allhazards response provides an integrated approach to handling dynamic and unpredictable events.

Risk reduction is another crucial component of RFPS. The Department has developed and delivers leading-edge prevention, public education, training, and emergency preparedness initiatives. These initiatives are proactive, aiming to make the community a safer and more welcoming place.

Within the RFPS, we are adapting to plan for the future of our city, ensuring that the services provided meet the community's needs and mitigate Regina's unique risks. As we look forward to the next 25 years of emergency services, the FMP will serve as a crucial road map for all future decision-making and ensure that the Department remains accountable and responsive to City Council and Regina residents. I want to express thanks to all who have contributed to this vital process. RFPS has a long-range plan to keep our communities safe because of your service.

A handwritten signature in black ink that reads "Layne Jackson".

Layne Jackson
Fire Chief (Director)

Regina Fire & Protective Services – Who We Are

Department Mandate:

RFPS delivers dynamic emergency response and public safety programs with highly trained personnel and industry best practices to preserve and enhance life, property and the environment.

Making a Difference in our Community 24/7

Department Values:

Caring

We are caring, respectful, and courteous to our colleagues and compassionate and empathetic to the people we serve.

Professional

We are highly trained, skilled professionals with a wealth of experience who focus on excellence in every task.

Reliable

We are there when you need us. We follow through and are accountable to each other, our community, and the City of Regina.

RFPS Staff and Services

Regina Fire & Protective Services is an all hazards, 24/7/365 agency that responds to over 5000 emergency calls for service each year. The Department employs 256 active firefighters, seven fire prevention personnel, two emergency management professionals, four civilian dispatchers, four training officers, two public education officers, four mechanic and maintenance personnel and approximately 30 other personnel in leadership, administration, and other professional services.

RFPS Organization:

Suppression & Rescue Section:

Fire suppression; six types of technical rescue; hazardous materials (hazmat) response; emergency medical services(EMS) response; dive recovery, public education, company inspections

Prevention Section:

Fire inspection, fire investigation, plan review, code compliance

Emergency Communications Section:

Emergency dispatch; computer-aided dispatch (CAD); scene support to Suppression & Rescue personnel

Emergency Preparedness & Business Continuity:

Emergency preparedness and business continuity; ensuring the City is prepared to deal with all types of disasters that may jeopardize the municipality's ability to sustain essential services

Technical & Administrative Services Section:

Business support, financial management, technical/systems support, International Fire Accreditation; business planning, quality assurance; long-term planning and strategic initiatives

Training & Education Section:

Staff development and training, professional qualification standards, critical skills maintenance and performance measurement, public education, community partnerships

Safety & Logistics Section:

Effective asset management, logistical support and a proactive approach to workplace safety, maintenance and mechanics personnel

Executive Summary

In 2013, City Council approved Design Regina: The Official Community Plan Bylaw No. 2013-48 (OCP) and set the foundation for long-term strategic direction. This Fire Master Plan (FMP) consists of a review of the community and its fire service that culminates into a 25-year plan for future opportunities for organizational improvements over the coming years.

The RFPS FMP is a comprehensive document designed to support specific OCP Policies, Priorities and Goals. As City Council has approved the OCP, it is critical that the FMP defines and identifies service expectations for the next 25 years.

The RFPS FMP is not necessarily a commitment for future investment. This policy direction will help inform decisions that are made by Council as part of the defined budget process and over the course of their ongoing deliberations. Investments will be reviewed each year through the City of Regina's annual budget process where Administration's proposed budgets are vetted through a public consultation process. Only after Council adopts the budget will investments be approved.

EMT has identified the relative policies, goals, and priorities of the OCP in relation to the FMP, which include but are not limited to the mentioned links to the OCP. The FMP sets out the short, medium, and long-term plans and strategies for providing proactive fire services to the public and contributes to the OCP Policy Goals and Priorities.

The FMP assesses present and future population statistics and anticipated growth. It is a plan that also evaluates past and present service levels provided by the RFPS, coupled with its service goals and expectations.

The plan's outcomes will assist RFPS in establishing strategic priorities complete with action plans. These shall be expressed in terms of goals, objectives, action steps, resources (human and financial) and the timelines required to successfully complete the priorities. Consultation and engagement with the general public is a key component of the FMP.

Implementation of the recommendations will depend on the City's resources and ability to move forward with the associated recommendations contained within the document. To assist with prioritization and implementation, the recommendations provided by EMT are broken down into the following timelines:

- Immediate – should be addressed due to legislative or health and safety requirements

- Short-term – 1 – 5 years
- Mid-term – 5 – 10 years
- Long-term – 10 – 25 years

This timeline approach will assist the Fire Chief, City Management, and City Council in identifying budgeting forecasts (if any) related to each of the recommendations. It will also assist with the prioritization of each recommendation.

While municipalities have been challenged with COVID-19, core services continue to serve their communities with critical emergency response functions. While some departments have moved to virtual citizen interaction or reduced non-critical services, fire departments have not had that ability. Whether it is fire inspections, training, or emergency response, the activities of the fire service continue. In many ways, the demands on the service have increased with the requirements for firefighters to take additional precautions on medical and other public-facing calls.

Based on the information received during our stakeholder meetings, meetings with the RFPS team, a review of supplied documentation, and reference to industry standards and best practices, there are a total of 39 tactical guidelines organized under eight strategic recommendations for consideration by the Fire Chief, senior management, and City Council to guide RFPS into the future.

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Introduction

Review Process and Scope

EMT has based its review process on the City's initial Request for Proposal (RFP) and the response document submitted. The specific scope of work identified in the RFP was reviewed. The FMP review was completed by utilizing industry best practices, current industry standards, and applicable legislation as the foundation for all work undertaken. EMT also used both quantitative and qualitative research methodologies to develop a strong understanding of current and future needs and circumstances of the community.

Performance Measures and Standards

This FMP has been based upon (but not limited to) key performance indicators that have been identified in national standards and safety regulations such as:

- The *Fire Safety Act*
- The Occupational Health and Safety Regulations, 1996
- The *Emergency Planning Act*
- The *Paramedics Act*
- The National Fire Protection Association (NFPA) standards:

The NFPA is an international non-profit organization that was formed in 1896. The mission of the NFPA is to reduce the burden of fire, eliminate death, injury, property, and economic loss due to fire and other related hazards. It is responsible for more than 300 codes and standards, research, training, and education that is designed to minimize the risk and effects of fire and other hazards. The NFPA standards are not law, but they are the benchmark and best practice in the fire service.

- The Commission on Fire Accreditation International (CFAI), a program that promotes fire service excellence by evaluating a fire department based on related NFPA standards, local legislation and industry best practices (the parent organization for CFAI is the Center for Public Safety Excellence).
 - This program has been adopted by many fire departments in Canada as a measure of best practices. To the Department's credit, RFPS has obtained accreditation from the CFAI.
- Fire Underwriters Survey (FUS) technical documents

Project Consultants

Although several staff at Emergency Management & Training Inc. were involved in the collaboration and completion of this Plan, the core review was conducted by:

- Darryl Culley, President Emergency Management & Training Inc.
- Les Karpluk, Fire Service Consultant
- Rick Monkman, Fire Service Consultant
- Lyle Quan, Fire Service Consultant

Together, the team has amassed a considerable amount of experience in all areas of fire and emergency services program development, review, and training. The EMT team has worked on projects that range from fire service reviews, creation of strategic and master plans, and development of emergency response programs for clients.

Recommendations

The plan identified eight strategic recommendations.

1. Regionalization and Partnerships
2. Department Communications
3. Diversity and Inclusion
4. Training/Workforce Development/Succession Planning
5. Technology and Innovation
6. Service Level Enhancements (stations)
7. Safety
8. Emergency Preparedness

Below are the recommendations and the tactical guidelines aligned within them.

Recommendations Implementation Table

Strategic Recommendations and Tactical Guidance		Timeline	Capital Resources Required	Operating Impacts	Source of Capital	Partnership Potential	Link to OCP Goals
1	Regionalization and Partnerships: The Department explore partnerships where benefits such as cost-saving and improved efficiency may be found in order to better serve the community.						
1a	RFPS, the Rural Municipality (RM) of Sherwood, and RM of Edenwold investigate a partnership where the municipalities pay for or share the costs of a fire station and RFPS staff it to respond to the respective RMs and the City of Regina (see Section 1.8.1 for more details).	M	See rec. #8f	See rec. #8f		H	B – Goal 1 B – Goal 4 D1 – Goal 1 D1 – Goal 3 D9 – Goal 1 D9 – Goal 2
1b	RFPS and the Saskatchewan Health Authority (SHA) finalize a new agreement in 2021 where RFPS paramedics and medical first responders are utilized more in the delivery of emergency medical care in the City of Regina. Further, the new agreement identifies appropriate protocols for RFPS paramedics to administer lifesaving medications. <i>See 1.7 for further information.</i>	S	N/C	\$		H	
2	Department Communications: The Department build upon its reputation in the community through a larger social media presence and formal public information programs.						

Strategic Recommendations and Tactical Guidance		Timeline	Capital Resources Required	Operating Impacts	Source of Capital	Partnership Potential	Link to OCP Goals
2a	RFPS should implement a formal program for property owners and landlords to educate them in terms of prevention, education, property maintenance, fire code and bylaw requirements. <i>See 2.4.2 for further information</i>	S	N/C	\$		S	D9 – Goal 2
2b	RFPS should implement a more formal social media where prevention, education, and suppression activities are communicated to the public. <i>*This recommendation is a direct result of the contributions of the public and stakeholder consultations.</i> <i>See 3.3.2 for further information</i>	S	N/C	N		S	D9 – Goal 2 E – Goal 2
3	Emergency Preparedness: The Department should continue to advance the Emergency Preparedness Program throughout the Department and the City of Regina.						
3a	The public warning system, NotifyNow, should be identified in the Municipal Emergency Response Plan (MERP) as well as how it can be utilized and initiated. <ul style="list-style-type: none"> Consideration should be given to special needs populations. RFPS should educate the public in terms of NotifyNow and how as a mass 	S	N/A	\$		H	

Strategic Recommendations and Tactical Guidance		Timeline	Capital Resources Required	Operating Impacts	Source of Capital	Partnership Potential	Link to OCP Goals
	communication system it is utilized to alert citizens of immediate notifications. <i>See 6.2.3 for further information.</i>						
3b	As the City of Regina grows in population a business case can be made to hire additional staff. RFPS should investigate the feasibility of an Emergency Preparedness Specialist for neighbouring communities. <i>See 6.2.5 for further information.</i>	S	N/C	\$		H	
4	Diversity and Inclusion: The Department pursue recruitment processes which support its diversity and inclusion goals.						
4a	RFPS should work on increasing its workforce diversity in terms of hiring a more diverse workforce for all divisions in RFPS. <i>*This recommendation is a direct result of the contributions of the public and stakeholder consultations. See 2.4.3 for further information</i>	S	N/C	\$		H	D11 – Goal 5 E – Goal 2
4b	RFPS conduct in-house training for recruits that are from a visible minority or Aboriginal background and train them to the National Fire	S	N/C	N		H	D11 – Goal 5 E – Goal 2

Strategic Recommendations and Tactical Guidance		Timeline	Capital Resources Required	Operating Impacts	Source of Capital	Partnership Potential	Link to OCP Goals
	Protection Association (NFPA) 1001 Level 2 and Primary Care Paramedic. These individuals would be identified through a diversity program implemented by RFPS where their skills, education and character make them suitable candidates for RFPS. <i>*This recommendation is a direct result of the contributions of the public and stakeholder consultations. See 2.4.3 for further information</i>						
5	Safety: The Department should continue to enhance and reinforce its safety initiatives for community, strategic and firefighter safety.						
5a	RFPS should ensure every firefighter has a second set of turnout gear due to the evidence of firefighters having a higher risk of getting certain cancers, and some inconsistencies with members being able to use a spare set of turnout gear. <i>See 5.1.9 for further information.</i>	S	N/C	\$\$		N	
5b	The pre-incident program needs to be evaluated to determine a plan to move forward. Pre-incident planning requires a significant amount of time and an analysis should be conducted	S	N/C	\$		N	

Strategic Recommendations and Tactical Guidance		Timeline	Capital Resources Required	Operating Impacts	Source of Capital	Partnership Potential	Link to OCP Goals
	to determine an achievable number for pre-incident plans, along with confirming that the present programs are meeting the needs of the Department. <i>See 3.3.3 for further information.</i>						
6	Training, Workforce Development, and Succession Planning: The Department conduct regular reviews of workforce development, training and succession planning to ensure continuous improvement and benefits realization.						
6a	RFPS identify the applicable rescue categories that coincide with the Fire Bylaw and identify whether Awareness, Operations, or Technical levels are required, and training of firefighters assigned to an existing rescue team be the priority for training. <i>See 3.4.3 for further information</i>	S	N/C	\$		N	D9 – Goal 2
6b	RFPS should implement a formal evaluation of the workload of both public education officers be completed in 2021 and reviewed annually. <i>See 3.3.2 for further information.</i>	S	N/C	N		N	
6c	A review should be conducted on the feasibility and costs with having	S	N/C	\$		N	

Strategic Recommendations and Tactical Guidance		Timeline	Capital Resources Required	Operating Impacts	Source of Capital	Partnership Potential	Link to OCP Goals
	trained firefighters staff the dispatch centre or having civilians only as certified dispatchers and adding the existing firefighters to the suppression force. This will be particularly important with NG 9-1-1. <i>See 2.4.2 for further information</i>						
6d	RFPS should hire additional fire inspectors/investigators within the next 5 years based upon the findings of a comprehensive work analysis of the existing job duties being performed by prevention staff and Fire Underwriter's Survey (FUS) standards of 1 inspector per 15-20,000 population. <i>See 3.3.6 for further information.</i>	S	N/C	\$\$		N	
6e	RFPS should plan and budget for an additional staff member to lead the fire and health & safety programs. This staff member must be qualified to lead a holistic and community-driven approach. Funding may be available from agencies that impact the health and safety of residents in the City of Regina.	S	N/C	\$\$		S	

Strategic Recommendations and Tactical Guidance		Timeline	Capital Resources Required	Operating Impacts	Source of Capital	Partnership Potential	Link to OCP Goals
	<i>See 3.3.3 for further information.</i>						
6f	Implementation of the Platoon Trainers should be a priority. RFPS management and IAFF Local 181 should strive to develop a memorandum of understanding regarding these positions and identify the exact roles, responsibilities, and expectations of these positions. <i>See 3.4.2 for more information.</i>	S	N/C	\$		N	
6g	RFPS should identify a skills maintenance training process to be part of a larger Training Strategy developed by the Department. <i>See 3.4.4 for further information.</i>	S	N/C	\$		N	
6h	RFPS Fire Training Division should research, implement and evaluate a training program where RFPS are trained in new and evolving structural firefighting tactics. <i>See 3.4.3 & 3.5.2 for further information.</i>	S	N/C	\$		N	
6i	RFPS management to identify the priorities for operation staff and implement a monthly schedule where	S	N/C	N		N	

Strategic Recommendations and Tactical Guidance		Timeline	Capital Resources Required	Operating Impacts	Source of Capital	Partnership Potential	Link to OCP Goals
	Public Education, Training and Operational needs are given priority. <i>See 3.4.4 for further information.</i>						
6j	RFPS should create a Training Advisory Group with representatives from the Training Division, Fire Officers, and IAFF Local 181. <i>See 3.4.4 for further information.</i>	S	N/C	N		N	
6k	Develop a career path for each out of scope position that identifies the knowledge, skills and abilities required for each. Citizen Services Division, along with the human resources consultant, develop succession plans for prevention and education staff, Fire Marshal, and emergency management staff. <i>See 3.4.5 for further information.</i>	S	N/C	\$		S	
6l	The City review the salary grid compression between unionized and non-union officers and make adjustments to reflect responsibilities. <i>See 3.7 for further information.</i>	S	N/C	\$\$ Dependent on the outcome		N	
6m	Training division develop a performance measurement tool for	S	N/C	N		N	

Strategic Recommendations and Tactical Guidance		Timeline	Capital Resources Required	Operating Impacts	Source of Capital	Partnership Potential	Link to OCP Goals
	fire officers as the need for training, education and experience in high risk/low frequency incident is critical. <i>See 3.4.4 for further information.</i>						
7	Technology and Innovation: The Department advance and leverage technological solutions and apply an innovative approach wherever possible to mitigate risk and improve safety in the community.						
7a	Residential sprinklers should be promoted in all new residential construction, especially in outlying communities where RFPS has an automatic fire service agreement due to extended response times. Developers should be encouraged to offer sprinklers as an option when building homes. Further, RFPS identify geographic areas that exceed industry best practice response time to implement high intensity residential fire (HIRF) requirements and work with the construction industry to educate homeowners on the availability of fire-resistant construction methods. <i>See 4.1.2 for further information.</i>	S	N/A	\$		H	C – Goal 4 D1 – Goal 3 D4 – Goal 3 D5 – Goal 1 D6 – Goal 5 D9 – Goal 1
7b	A plan should be implemented to have all fire stations outfitted with a	S	N/C	\$		N	

Strategic Recommendations and Tactical Guidance		Timeline	Capital Resources Required	Operating Impacts	Source of Capital	Partnership Potential	Link to OCP Goals
	monitor for mapping and highlighting routes to the emergency and other vital information. <i>See 2.4.2 for further information.</i>						
7c	The City of Regina continue to work with traffic pre-emption providers to assess the potential benefits based on the road network and traffic patterns of the city, types of systems that may be appropriate, options available, and estimated costs. <i>See 4.3 for further information.</i>	S	\$	N		S	
7d	RFPS purchase an unmanned aerial vehicle (drone) to be utilized for emergency, preplanning, emergency management and non-emergency functions. <i>See 5.4.2 for further information.</i>	M	N/C	\$		N	
8	Future Service Level Enhancements/Resourcing: The Department implement a long-range plan for fire stations, equipment and personnel to respond to the fire services needs of the community as it grows.						
8a	The City undertakes a six-phase, 25-year plan to increase the capacity of the fire department to meet the growing needs of the City. <i>See 8.1 for further information.</i>	S	N/C	N		N	B – Goal 1 B – Goal 3 B – Goal 4 C – Goal 1 D1 – Goal 1 D1 – Goal 2

Strategic Recommendations and Tactical Guidance		Timeline	Capital Resources Required	Operating Impacts	Source of Capital	Partnership Potential	Link to OCP Goals
							D4 – Goal 1 D4 – Goal 2 D4 – Goal 3 D5 – Goal 1 D5 – Goal 6 D9 – Goal 1 D9 – Goal 2 D11 – Goal 3 E – Goal 1 E – Goal 2 E – Goal 4 E- Goal 5 E – Goal 7
8b	Phase 1: Build a new Station 8 in the southeast area of the city. A full staffing complement of 20 firefighters would be required, along with a fire apparatus. <i>See 8.1.1 for further information.</i>	S	\$\$\$	\$\$\$		N	D1 – Goal 1 D4 – Goal 3 D9 – Goal 1 D9 – Goal 2 E – Goal 7
8c	Phase 2: Add a station 9 at or in the vicinity of the airport. A full staffing compliment of 20 firefighters would be required, along with a fire apparatus. <i>See 8.1.2 for further information.</i>	M	\$\$\$	\$\$\$\$		H	

Strategic Recommendations and Tactical Guidance		Timeline	Capital Resources Required	Operating Impacts	Source of Capital	Partnership Potential	Link to OCP Goals
8d	Phase 3: Build a fire station 10 in the vicinity of Prince of Wales Drive & 7th Avenue East. A full staff complement of 20 firefighters would be required along with a fire apparatus. <i>See 8.1.3 for further information.</i>	L	\$\$\$	\$\$\$\$		N	
8e	Phase 4: Build a new Station 6 in the northwest quadrant of the City. The staffing and apparatus would be moved from current Station 6. <i>See 8.1.4 for further information.</i>	L	\$\$\$	N		N	
8f	Phase 5: RFPS and the RM of Sherwood investigate a partnership where the RM of Sherwood build a fire station (Station 11) in the vicinity of Diefenbaker Drive and Pasqua Street., and RFPS staff it to respond to the RM of Sherwood and the City of Regina. <i>See 8.1.5 for further information.</i>	L	\$\$\$	\$\$\$\$		H	
8g	Phase 6: Build a fire station with a new crew complement in the northwest quadrant of the City in the general vicinity of McCarthy Boulevard. and 4th Avenue	L	\$\$\$	\$\$\$\$		N	

Strategic Recommendations and Tactical Guidance		Timeline	Capital Resources Required	Operating Impacts	Source of Capital	Partnership Potential	Link to OCP Goals
	A full staffing complement of 20 firefighters would be required, along with a fire apparatus. <i>See 8.1.6 for further information</i>						
8h	RFPS consider the option of leasing commercial space for a station where appropriate. <i>See 8.2 for further information.</i>	O	N/C	N		H	B – Goal 1
8i	RFPS actively look for opportunities to integrate any new fire stations into multi-purpose buildings. <i>See 8.2 for further information.</i>	O	N/C	N		H	B – Goal 1 B – Goal 3 D1 – Goal 1 D4 – Goal 1 D4 – Goal 2 D4 – Goal 3 D5 – Goal 1 D5 – Goal 6 D6 – Goal 5 D9 – Goal 1 D11 – Goal 3
8j	Safe haven public safety systems be considered for installation in all fire stations along with a public education program to promote the program. <i>See 5.1.11 for further information.</i>	S	\$	N		S	
8k	All frontline apparatus should have a minimum of 3 personal thermal	S	\$	N		N	

Strategic Recommendations and Tactical Guidance		Timeline	Capital Resources Required	Operating Impacts	Source of Capital	Partnership Potential	Link to OCP Goals
	imaging cameras (TICs) and each station to have one spare for a total of 43 TICs. A formal TIC training program and implement policies and procedures for the use of TICs are required. <i>See 5.4.1 for further information.</i>						
8I	RFPS should replace the existing 1952 Mobile Command Centre vehicle in the next 12-18 months. <i>See 6.2.4 for further information.</i>	S	\$	\$		N	

Guide to Implementation Table

Timeline (in combination with population growth)

S = Short; 0-5 yrs (2021, 2022, 2023, 2024, and 2025)
M = Medium; 6-10 yrs (2026, 2027, 2028, 2029, 2030)
L = Long; 11-25 yrs (2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040)
O = Ongoing the next twenty years as opportunities arise

Capital Resources Required (One-Time Costs)

N/C = No change in existing human or capital requirements
\$ = <\$1M
\$\$ = \$1.1M to \$5M
\$\$\$ = \$5.1M to \$10M
\$\$\$\$ = >\$10M

Partnership Potential

N = Little or None; this will be a City led initiative
S = Some; the City can likely partner with others who will provide significant resources to achieve desired goals
H = Lots; it is conceivable and desirable that this project can be led by another organization with the City in a support role, providing either financial support or other forms of support.

Sources of Capital Funding

□ = Policy/Priority Action (requires significant public and/or stakeholder engagement)
SAF = May be Servicing Agreement Fee eligible
ABR = Additional Budget Requirement

Operating Impact

N = little or no impact; can be accomplished within existing resources
\$ = Annual impact of less than \$100K
\$\$ = Annual impact of \$100K to \$500K
\$\$\$ = Annual impact of \$500K to \$1M
\$\$\$\$ = Annual impact of more than \$1M

SECTION 1: Community and Fire Department Overview

This FMP for the RFPS analyzes and identifies current and probable community fire risks and needs over the next 25 years and beyond. This will greatly assist RFPS with future planning relating to staffing and response, fire and life safety programming, and asset management. To ensure a comprehensive assessment, this review has examined and researched all aspects of RFPS' operations including planning, fire prevention, training and education, communications, apparatus and equipment, human resources, station suitability and location, and large-scale emergency preparedness.

1.1 Community Overview

Regina is the capital of Saskatchewan and the 16th largest city in Canada with a population of approximately 257,000¹. Regina is in the south-central area of the Province. The City covers an area of 118.4 km². It is in the middle of the Prairie Provinces with Alberta to the west, and Manitoba to the east. It borders the American states of Montana and North Dakota.

Between 2011 and 2016, the City's population increased by close to 25,000, or 11.8% and its continued growth placed Regina at the 6th fastest growing city in Canada. It is also one of Canada's youngest cities with only 12.7% of the population over 65.

Regina's population is expected to hit 300,000 by 2038. The economy of Regina is linked to the Province's natural resources and agricultural industries; however, within the City, commercial offices and services provide the main source of employment.

The City is expecting several major new development projects in the next few years, including new residential and commercial towers within the downtown and a significant mixed-use infill development – the Regina Revitalization Initiative – which includes the Railyard Renewal Project and the Taylor Field Neighbourhood.

¹ Regina's Economic Report Card, December 2019 Edition

FIGURE #1: Map of Regina in Relation to Other Communities in the Region



As noted in the City's Official Plan, long-term, sustainable growth is a key focus. In fact, 'Goal 1 – Long-Term Growth' confirms a focus on long-term growth to ensure that sufficient developable land is protected for future city growth, and further that the City will:

- a. Endeavor to ensure that lands contained within the LONG-TERM GROWTH AREA (500K) are protected over the long term to accommodate a city population of 500,000, as conceptually shown on Map 1 – Growth Plan.
- b. Direct future growth as either intensification on or expansion into lands designated to accommodate a population of approximately 300,000, in accordance with Figure 2a – Growth Plan.
- c. Direct at least 30% of new population to existing urban areas as the City's intensification target:
 - Review the intensification target every five years.²

² Design Regina: Official Community Plan

As noted in the 2019 updated *Design Regina Official Community Plan (OCP)*, Regina is experiencing relatively rapid expansion due to diverse and growing economies centered around oil, potash, and agriculture. Regina continues to see significant growth as one of Canada's fastest growing cities. The OCP projects continued growth, with more and more people making Regina their home. Many of those new residents will be recently landed immigrants. This could bring Regina's population up to an estimated 300,000 residents by 2038. The City's projected rate of growth and increasingly diverse population make the process of developing a long-term plan critical.

According to the 2017 to 2019 response data, RFPS responds to just over 5,024 calls per year, which equates to 19.5 calls per 1,000 population. If this call number were to stay consistent, and the population does indeed grow to 300,000 people by 2038, RFPS could expect to respond to approximately 7,000 to 8,500 calls (an estimated increase of 2,000 to 3,500 calls) by the year 2038. This statistic alone supports the necessity of future growth in RFPS, both in staffing and facilities.

When identifying population growth, it is advisable to indicate where the actual growth will occur. City staff provided EMT with the following map of possible future subdivisions. As noted in FIGURE #2, there will be significant pockets of growth, some of which are outside of a timely primary response reach of the current fire stations. As the city grows there will be a need for the fire department to keep up with the growth to ensure an effective level of service continues.

FIGURE #2a: Growth Plan

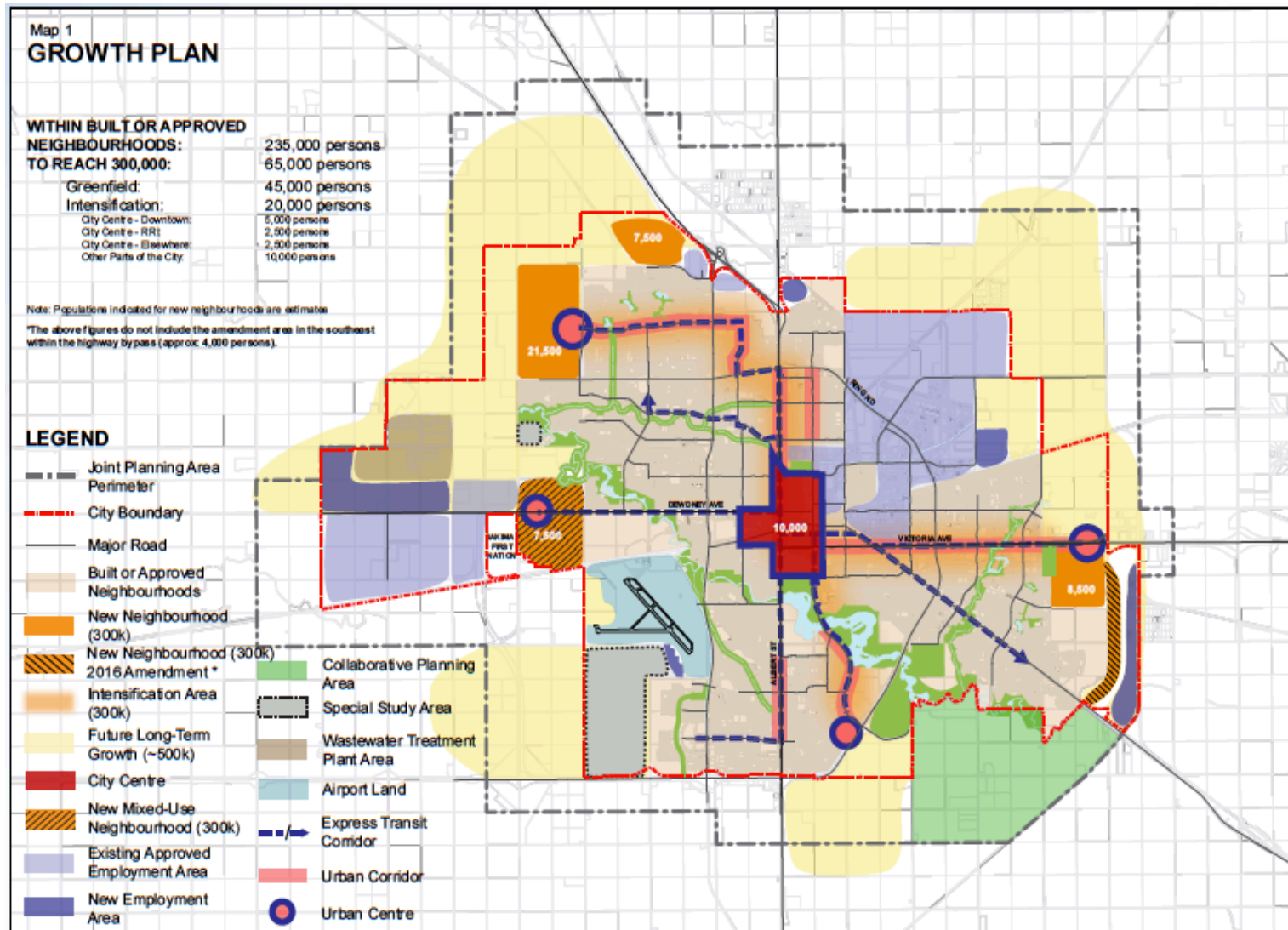
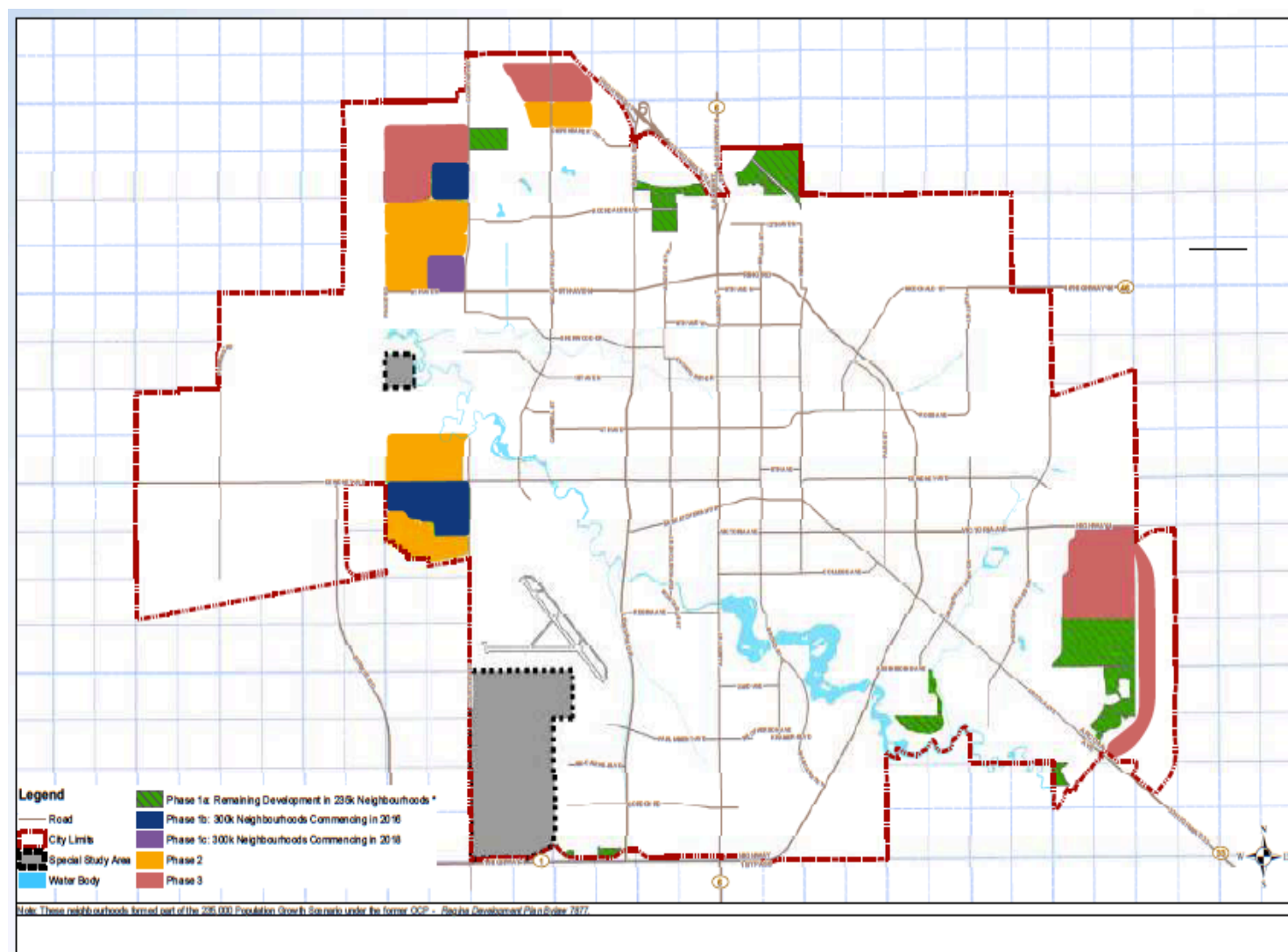


FIGURE #2b: Phasing of New Neighbourhoods and New Mixed-Use Neighbourhoods



Note: FIGURE #2a and 2b maps retrieved from Design Regina Official Community Plan

1.2 Fire Service Composition

RFPS is a well-trained and technically diverse emergency service, capable of handling a broad range of emergencies and hazardous situations. Functions of RFPS include fire suppression, auto extrication, hazardous material spills, industrial accidents, tiered medical response, high/low angle rescue, ice and water rescue, urban search and rescue, and confined space rescue, provided from seven fire stations located throughout the City of Regina. In 2021, the dive team will have fully transitioned over from the Regina Police Service (RPS) to RFPS.

In addition to emergency response services, RFPS provides public fire safety education, fire prevention inspections and code enforcement. RFPS also delivers emergency planning for the community through Emergency Preparedness and Business Continuity (EPBC).

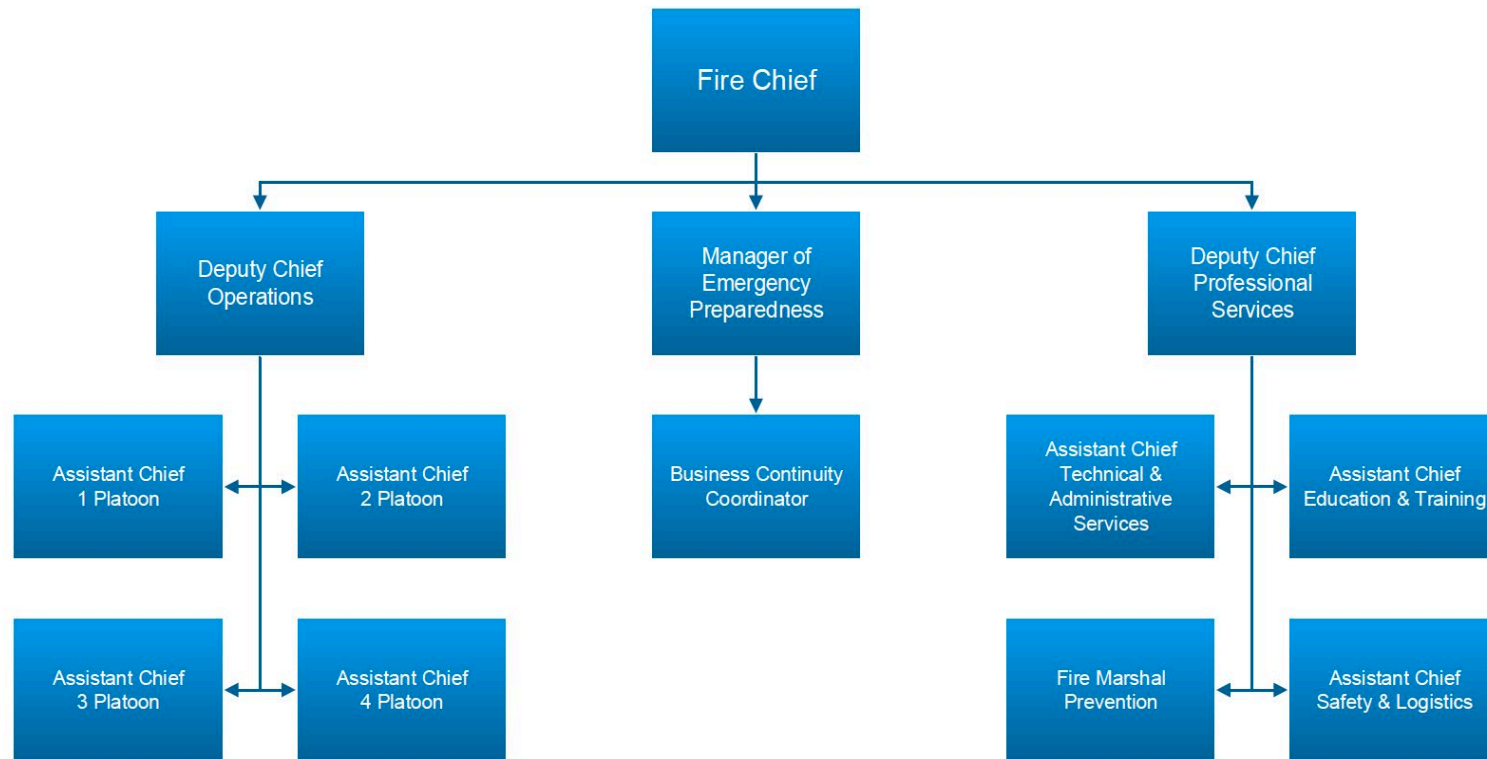
Responding to 5,189 incidents in 2019, RFPS serves a population of approximately 257,000 spread over an area of 118.4 km². This equates to a present population density of 2,170 residents per square kilometre.

There are five different sections within the Department, namely, Technical & Administrative Services, Suppression & Rescue, Fire Prevention, Education & Training, Communications, and Safety & Logistics. More information on each will be supplied within each related section of the FMP.

The organizational chart illustrated in FIGURE #3 reflects the general reporting structure within the Fire Department.

FIGURE #3: Fire Department Organizational Chart

Regina Fire & Protective Services Organizational Chart



1.3 Governance and Fire Bylaw

The current Fire Bylaw was last updated in 2018. Section 6 of the document identifies what services the Department is to offer, cited below:

Purpose of the Department

6(1) The Department is continued as an established service department of the City pursuant to section 8(1)(i) of The Cities Act and is authorized to provide services relating to fire suppression, prevention and investigation and additional related services, including, but not limited to:

- a. emergency response services*
- b. inspections and investigations*
- c. educational and training programs*
- d. rescue services*
- e. dangerous goods emergency services*
- f. regulation of fireworks and pyrotechnics*
- g. regulation of private fire safety equipment inspectors*

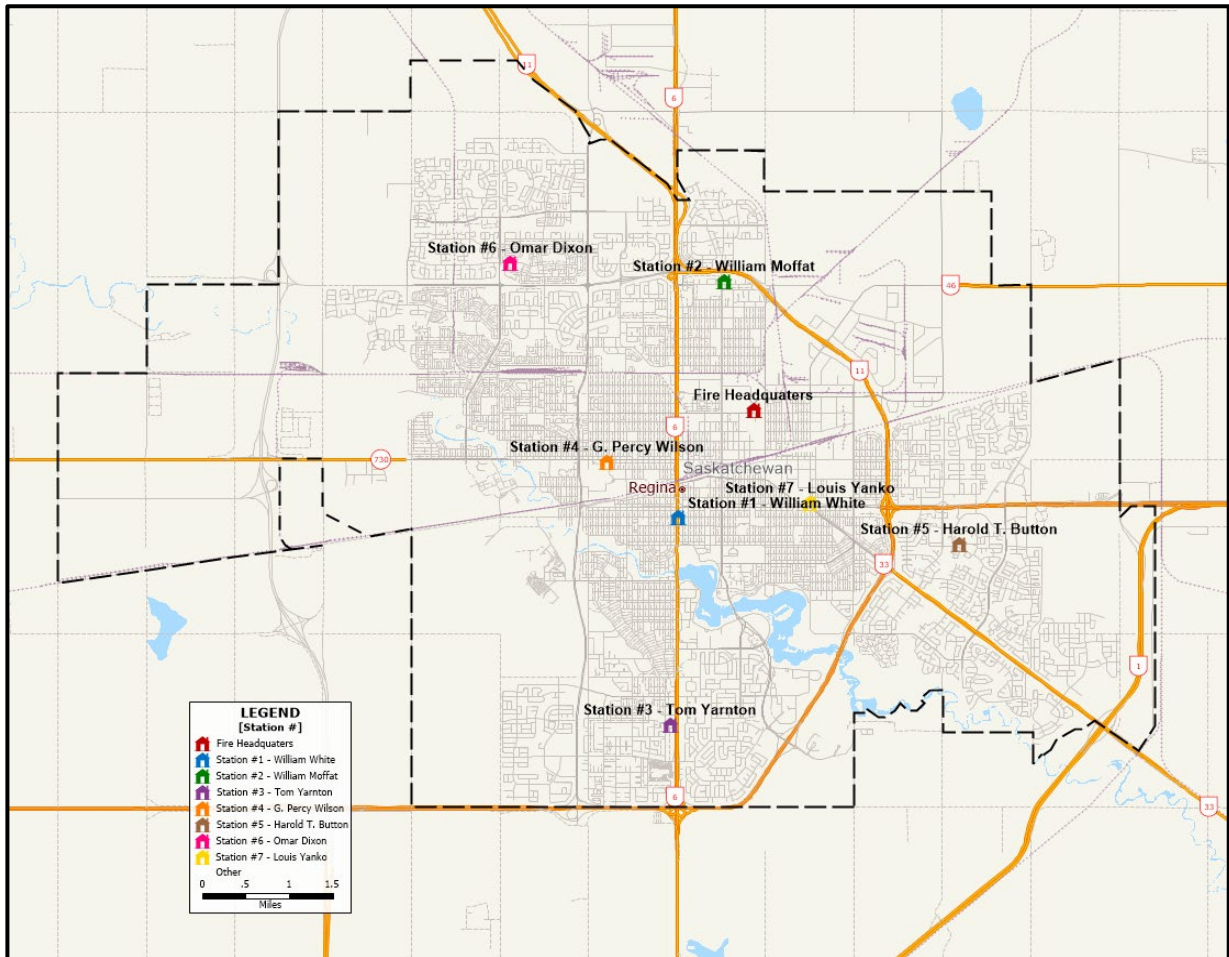
Although this list appears to cover a wide range of services, to assist the Fire Chief in meeting the needs and expectations of Council, it is recommended that the Fire Bylaw be more precise in identifying the level of the services that RFPS is authorized to supply to the community. For example, rescue services can be interpreted differently by members of the public, City Council, or the Executive Leadership Team. Defining the level of service will provide clearer direction to the Fire Chief regarding training needs, fire prevention/public education goals, public safety, equipment, facility needs, and response time goals and expectations.

To ensure the bylaw continues to reflect community needs and related service levels, annual reviews of the document should be completed by the Fire Chief as a standard business practice to ensure that the RFPS is operating within Council-approved parameters.

1.4 Fire Department Coverage Areas

The following map (FIGURE #4a) identifies the present locations of the seven fire stations, along with the city's borders.

FIGURE #4a: RFPS Stations

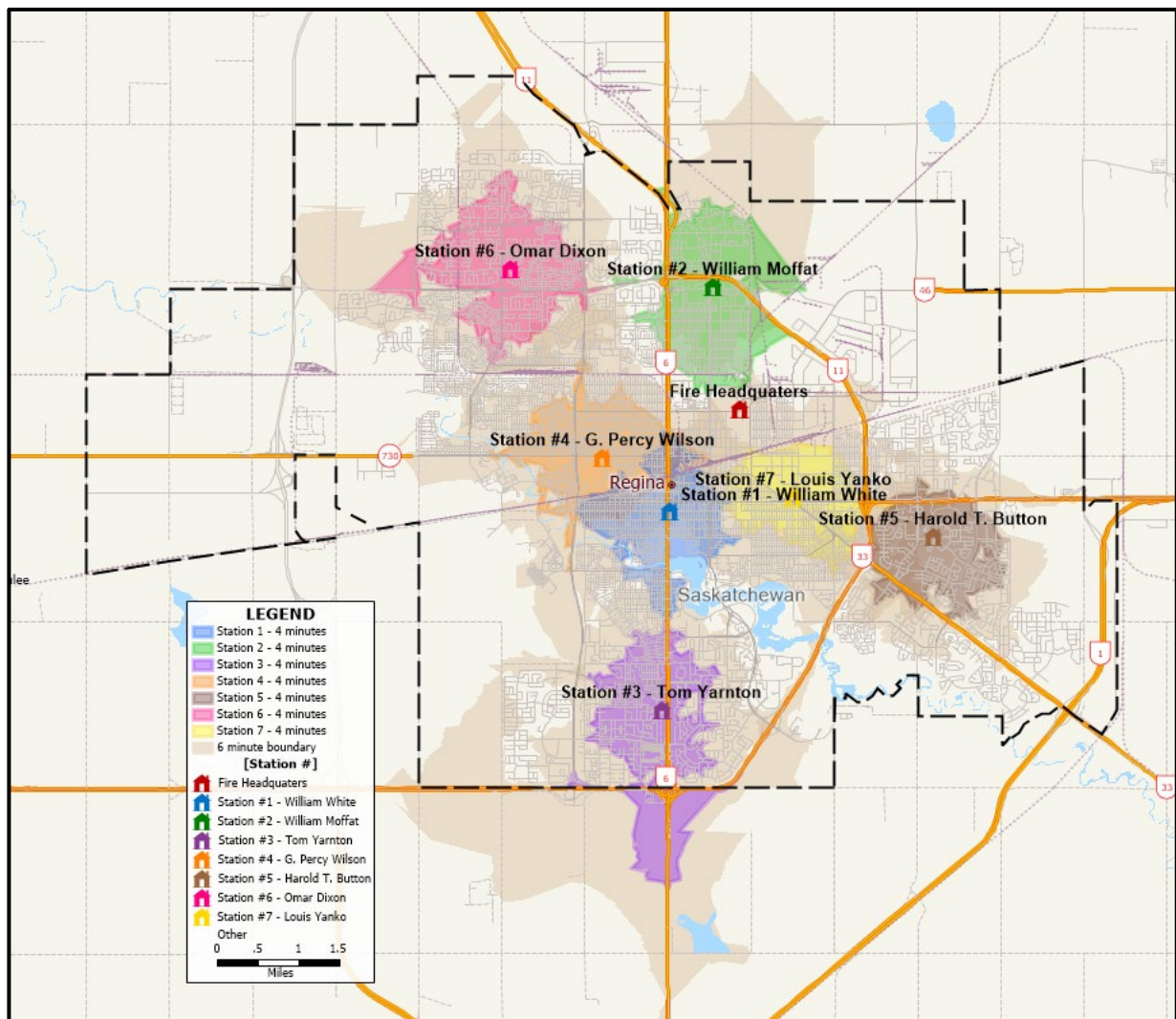


As illustrated in FIGURE 4a, for the most part, the fire stations are located in the developed portions of the city.

NFPA 1710 identifies for career fire departments a 90th percentile standard for the first arriving apparatus for a single-family dwelling, open-air strip shopping centre, apartment and high-rise, to arrive in four minutes travel time or less, with a second alarm assignment arriving in six minutes travel time or less. When we overlay the NFPA's recommended drive-time of four minutes for a career fire department (as seen in the following map) there already exist response gaps in the western and northeast/southeast sections of the city (FIGURE# 4b).

Based on information noted in the City's Official Plan, along with meeting with City staff, these are the areas where the most growth is anticipated to occur. More discussion will be presented later in this document, in sections 4 and 5.

FIGURE #4b: RFPS Stations – 4- and 6-Minute Drive-Time Zones



1.5 Communications/Dispatching Services

The RFPS has its own dispatching section that is located at the headquarters facility. RFPS receives the 9-1-1 call from the Regina Public Safety Answering Point which is located within the RPS station.



Based on EMT's review of the Communication's office facilities, it is well set up and efficient in its operations.

NFPA 1221 – Standard for The Installation, Maintenance, and Use of Emergency Services Communications Systems

This NFPA standard is recognized and an industry best practice/guideline for operational goals to be met by a communications division. Section 7.4 of the standard identifies the following operating procedures:

NFPA 1221, Section 7.4 Operating Procedures

7.4.1* Ninety-five percent of alarms received on emergency lines shall be answered within 15 seconds, and 99 percent of alarms shall be answered within 40 seconds.

7.4.1.1 Compliance with 7.4.1 shall be evaluated monthly using data from the previous month.

By implementing this standard, both RFPS and RPS will have a set of goals and expectations to work within. RFPS should also conduct annual reviews of the dispatching services provided by RPS to ensure that it is meeting the needs of RFPS and to identify opportunities for improvements (by both parties).

Technology Consideration – Next Generation Communications (NG 9-1-1)

Current Condition

Next Generation 9-1-1:

- As noted in the Canadian Radio-television and Telecommunications Commission (CRTC) excerpt (Appendix C), March 2024 is a critical date.
- The Saskatchewan Public Safety Agency (SPSA) is responsible for managing Saskatchewan's 9-1-1 emergency dispatching services and will be the lead agency throughout the transition to NG 9-1-1.
- RFPS will need to work with all related stakeholders to ensure that the community and its fire service is able to meet the CRTC timelines for implementation of the next generation telephone and communications systems.
- At this time no costs or estimates for this endeavour have been provided by any government agency, as much of the logistics are still being worked out by the upper level stakeholders (SPSA, Public Safety Answering Point (PSAPs), central dispatch centres and regional steering groups). Communication system upgrades will, however, have a significant financial impact on every community.

1.6 Fire Service Agreements

These agreements (mutual aid and fire service protection) are essential for the community (customer) as fire protection services enhance the safety and welfare of that community. Typically, a mutual aid agreement enables a fire department to request the additional services of another fire department when certain situations warrant it. RFPS provides suppression, specialty rescue and hazardous materials responses and more importantly, an immediate response to provide those services upon request.

RFPS has 14 agreements in place, and 10 of those are a decade old or more and require updating in terms of service fees, payments, termination of services and a standard renewal time frame. For example, some of the contracts did not identify the contract timeframe while others identified a 5-year term with an automatic renewal for two 5-year terms. The best practice is that a contract will continue to exist until renegotiated, but it will be in the best interest of RFPS to ensure that the expired contracts are revised and updated.

1.6.1 Summary of Agreements

1.6.1.1 Major Urban Disaster Mutual Aid Agreement (2005)

This is a mutual aid agreement with Moose Jaw, Saskatoon, Prince Albert, Swift Current, Yorkton, North Battleford and Weyburn where the parties agree to provide firefighting or emergency services or emergency response equipment to the others and to receive the same from the others in the event of a major urban disaster as defined below:

- a. A calamity caused by:
 - Accident,
 - Act of war or insurrection,
 - Terrorist activity as defined in the Criminal Code, or
 - Forces of nature, or
- b. A present or imminent situation or condition that requires prompt action to prevent or limit:
 - The loss of life,
 - Harm or damage to the safety, health, or welfare of people, or
 - Damage to property or the environment.

There is a need for this mutual aid agreement to be revised and discussions should occur around a pandemic situation where the parties may be impacted and vulnerable.

1.6.1.2 Mutual Aid Agreement with the Regina Qu'Appelle Health Region (January 26, 2009 to January 5, 2014)

In 2017 the Government of Saskatchewan initiated the transition of 12 Regional Health Authorities into a single Saskatchewan Health Authority (SHA). A new agreement between the SHA and RFPS should be pursued to better utilize the trained personnel of RFPS to respond to and initiate advanced medical treatment. Consideration must be given to improving dispatch procedures between Regina Emergency Medical Services (EMS) and RFPS and working closely with the medical director, so RFPS primary care paramedics are able to provide medical care as per their scope of practice.

1.6.1.3 Global Transportation Hub Fire Services Agreement

The City of Regina and the Global Transportation Hub renewed the fire services agreement in January 2020. This automatic response agreement will have RFPS responding and providing emergency services as they would within the City of Regina excluding first-response medical services. A consultation occurred with a representative from the Global Transportation Hub (GTH) and no concerns were identified with the fire service agreement.

1.6.1.4 Edenwold Fire Services Agreement (June 1, 2018-May 31, 2023)

A five-year agreement with the option to renew for two additional one-year terms where RFPS is a secondary responding agency and the response is discretionary for RFPS to provide fire and emergency services.

1.6.1.5 Lumsden Fire Services Agreement (April 22, 2003)

The agreement needs to be revised and updated and some administrative issues were raised and addressed during the consultation process. The fire services agreement is discretionary for RFPS to provide fire and emergency services.

1.6.1.6 Cowessess First Nation Fire Services Agreement (March 26, 2008)

The agreement covers all those services typically provided by RFPS in response to alarms, fire suppression, rescue, and hazardous materials response, but excluding first response medical services. The fire services agreement is discretionary for RFPS to provide fire and emergency services.

1.6.1.7 RM of Sherwood Fire Services Agreement (March 5, 2002)

The agreement requires revision and updating due to the age of this document. At present, the agreement notes that it is discretionary for RFPS to provide fire and emergency services. This can continue as noted but updating this document will ensure that the present agreement does meet the needs and expectations of each stakeholder.

1.6.1.8 Sakimay First Nations and Four Horse Development Fire Services Agreement (May 23, 2017)

The automatic response agreement will have RFPS responding and providing emergency services as they would within the City of Regina excluding first-response medical services. RFPS is authorized to provide fire prevention, suppression and protection services, emergency response services, fire inspection and investigation services, rescue and dangerous goods emergency services to the geographic fire services areas identified in the agreement. During the consultation process representatives from the Sakimay First Nations and Four Horse Development did not have any questions or concerns regarding the fire services agreement provided by RFPS.

1.6.1.9 SaskFerco Products Fire Services Agreement (January 1, 2006)

The agreement requires revision and updating due to the age of this document. At present, the agreement notes a “third level response” for RFPS to provide fire and emergency services. This can continue as noted but updating this document will ensure that the present agreement does meet the needs and expectations of each stakeholder.

1.6.1.10 Town of Balgonie Fire Services Mutual Aid Agreement (2002)

The agreement requires revision and updating due to the age of this document. At present, the agreement notes that it is discretionary for both parties to provide fire and emergency services. This can continue as noted but updating this document will ensure that the present agreement does meet the needs and expectations of each stakeholder.

1.6.1.11 Town of Pilot Butte Fire Services Mutual Aid Agreement (2002)

The agreement requires revision and updating due to the age of this document. At present, the agreement notes that it is discretionary for both parties to provide fire and emergency services. This can continue as noted but updating this document will ensure that the present agreement does meet the needs and expectations of each stakeholder.

1.6.1.12 Village of Craven Fire Services Mutual Aid Agreement (2002)

The agreement requires revision and updating due to the age of this document. At present, the agreement notes that it is discretionary for both parties to provide fire and emergency services. This can continue as noted but updating this document will ensure that the present agreement does meet the needs and expectations of each stakeholder.

1.6.1.13 The Village of Grand Coulee Fire Services Mutual Aid Agreement (2002)

The agreement requires revision and updating due to the age of this document. At present, the agreement notes that it is discretionary for both parties to provide fire and emergency services. This can continue as noted but updating this document will ensure that the present agreement does meet the needs and expectations of each stakeholder.

1.6.1.14 Village of White City Fire Services Mutual Aid Agreement (February 26, 1999)

The agreement requires revision and updating due to the age of this document. At present, the agreement notes that it is discretionary for both parties to provide fire and emergency services. This can continue as noted but updating this document will ensure that the present agreement does meet the needs and expectations of each stakeholder.

1.6.2 Overall Assessment of Agreements

RFPS provides numerous services and it is suggested that a framework be created where RFPS have regular consultation with its partners to ensure that record keeping and regular updates regarding fire service, safety matters, and anything that can hinder fire service delivery occur.

Attention must be given to the automatic response agreements with the Global Transportation Hub and the Sakimay First Nation and Four Horse Development where RFPS equipment and staff will automatically respond and be out of a state of readiness to respond back to the City of Regina if required. There are risks involved with automatically responding within the parameters of these two fire service agreements and it is suggested that when RFPS equipment and staff respond to the GTH and Sakimay First Nation, that RFPS off-duty staff are immediately called in to maintain proper staffing within the City of Regina.

Suggested revisions for all the agreements include but not limited to the following:

- Identify *the Fire Safety Act* where applicable.
- Standardize the agreement terms so all have a 5-year term with an optional two 5-year extension.
- Include that nothing in the agreements obliges the City of Regina to deal with insurers of the requesting party.
- Standardize the per response fee, annual retaining fee, and annual cost increases.

During a revision of the service agreements, consideration should be given to responses in other emergency classifications such as:

- Flooding or other natural events like a tornado or plough wind where RFPS can respond with their Mobile Command Unit

- Building collapse
- Confined space, high and low angle rescue
- A hazardous material spill or leak that can impact the health and safety of people in a community
- Rescue operations requiring specialized skills
- Mass casualty incidents

1.7 Emergency Medical First Response Services Agreement

In January 2009, Regina City Council passed bylaw *No. 2009-4 The Emergency Medical Services Mutual Aid Agreement Execution Bylaw* between the Regina Qu'Appelle Health Region-Emergency Medical Services (RQHR-EMS) (Now the Saskatchewan Health Authority) and the City of Regina through RFPS to provide emergency medical first response services. The term of the agreement had an expiry date of January 5, 2014. In 2017 the Saskatchewan government initiated its move from 12 health regions into one provincial health authority called the Saskatchewan Health Authority (SHA).

The purpose of the EMS Mutual Aid agreement is to establish and define roles and responsibilities for the provision of pre-hospital emergency medical services in a safe, coordinated, integrated and effective manner. Currently, RFPS has 101 paramedics and 98 medical first responders on staff that can provide out-of-hospital emergency medical care for the community. RFPS ensures that paramedics meet the licensing requirements as governed by the Saskatchewan College of Paramedics.

With the number of paramedics and medical first responders readily available in RFPS, a new agreement to provide an enhanced level of prehospital emergency care should be finalized with the SHA.

RFPS strives for a 90 percentile (total) response time of 6 minutes and 20 seconds, accounting for the arrival of a first-due unit with three firefighters and one officer on scene to assess scene safety, establish command, and size up the incident. Further, within one minute of arrival, provide first responder care in terms of conducting an initial patient assessment, obtain vitals and the patient's medical history, and provide immediate medical care.

Based on EMT's review of the related EMS program, it is recommended that the RFPS and the SHA finalize a new agreement in 2021 where RFPS paramedics and medical first responders are utilized more in the delivery of emergency medical care in the City of Regina. Furthermore, it is recommended that the new agreement identifies appropriate protocols for RFPS to administer lifesaving medications.

1.8 Regionalization Considerations

As noted in the Official Community Plan, the City of Regina outlines a projected population of approximately 300,000 by 2038. The FMP is to provide a regionalization scenario based upon those projections.

In the 2019 report titled, *The Region of Windsor and West Hants Municipality, Regional Fire Services Review* it was stated that with the regionalization of services, the main goals are cost efficiencies, elimination of duplication of services, better utilization of resources, better cooperation in service delivery, consistency of equipment procedures, enhanced firefighter safety and benefits, uniform training and performance standards, and adequate qualifications and staffing levels.”³

In 2001 the Ottawa Fire Services amalgamated with nine fire departments and now provides emergency services through 45 fire stations located across the Ottawa region that includes 16 paid on-call stations and 5 composite stations.

In the Halifax Regional Fire & Emergency 2019-2021 Business Plan, it identifies that emergency services protection is delivered to every part of the Halifax Regional Municipality out of 51 stations:

- 9 24-hour Career Stations
- 9 24-hour Career Composite Stations (career and volunteer)
- 11 10.5-hour Career Composite Stations (career and volunteer)
- 22-Volunteer Stations

In the context of regionalization for fire services, EMT will refer to it as the administrative and governance structure that assumes the delivery of fire services to a defined population. With a regionalization scenario it is critical to recognize that EMT is presenting regionalization in terms of fire services only and not in the form of a regional government or amalgamation.

Currently RFPS has fire service and mutual aid agreements with the RM of Sherwood, Town of Pilot Butte, Village of White City, Town of Balgonie and Town of Grand Coulee where it is discretionary to provide fire and emergency services. Currently, the following agreements exist:

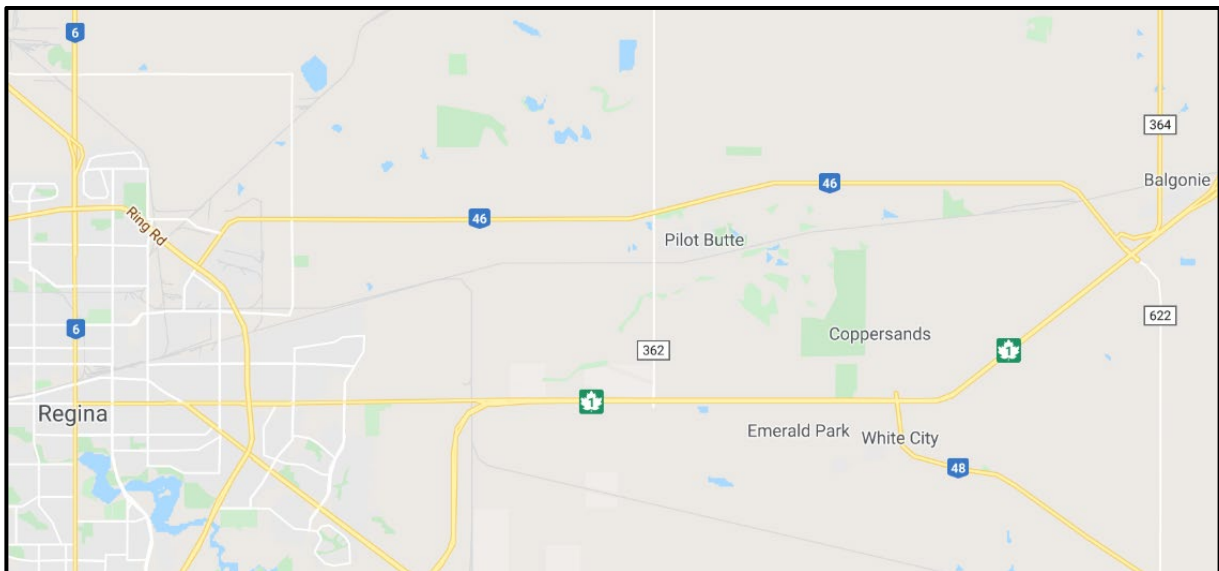
- Village of White City-mutual aid agreement
- Town of Pilot Butte-mutual aid agreement
- Town of Balgonie-mutual aid
- Grand Coulee-mutual aid

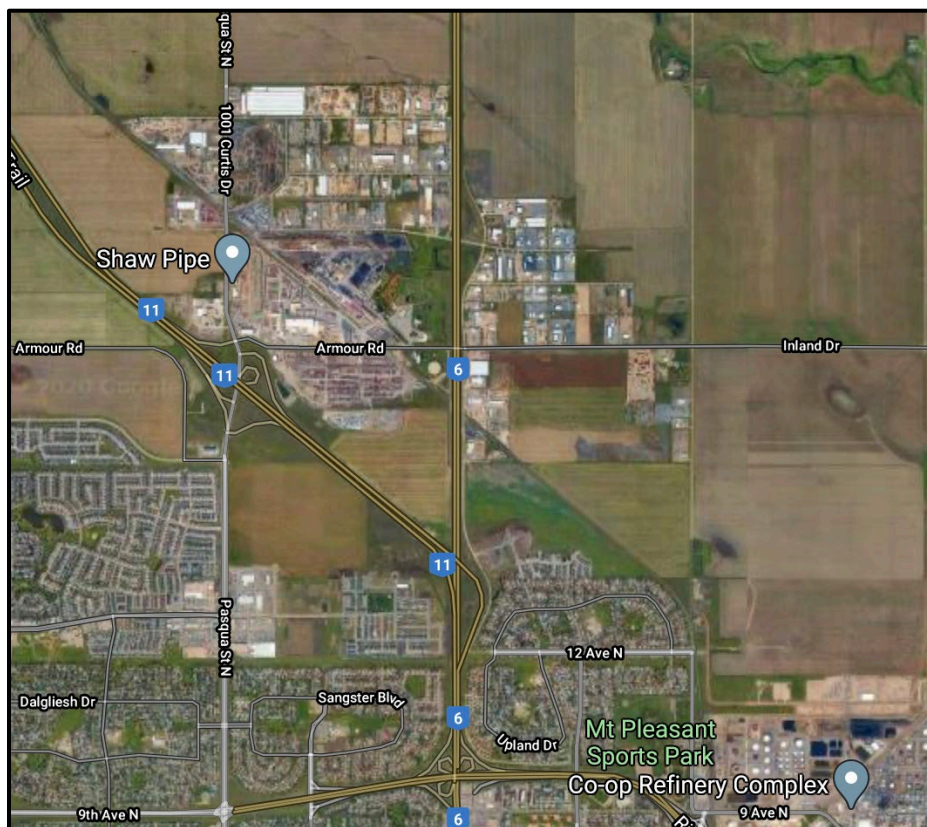
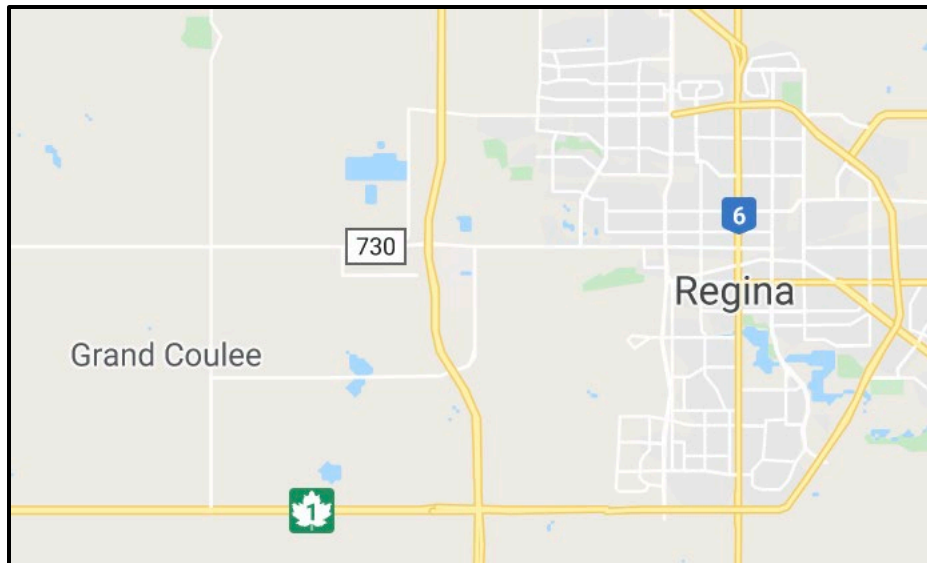
³ The Region of Windsor and West Hants Municipality, Regional Fire Services Review (2019)

- RM of Sherwood-fire services agreement.

Due to the proximity of Emerald Park, White City, Pilot Butte, Balgonie and Grand Coulee it is feasible that a regionalization of services could occur with these municipalities in the next 25-years. The RM of Sherwood and Emerald Park do not have a fire department and therefore a different model will need to be utilized and will be presented later in this section.

Emerald Park is 9 km east of Regina, White City is 10 km east of Regina, Pilot Butte is 11 km east of Regina and Balgonie is 27 km east of Regina, while the RM of Sherwood surrounds Regina with industrial and commercial development along Highway 6 and Grand Coulee is 18 km west of downtown Regina. Below are images identifying the locality of the mentioned communities and how close each community borders the city limits of Regina.





RM of Sherwood Industrial subdivision along Highway 6

“One of the most common problems noted by fire officials is overcoming logistical differences between fire departments. These differences reside in the standard operating procedures, firefighting equipment, communication systems, and knowledge of a municipality. These differences can impede fire response times and increase the risk of misunderstandings impacting the ability to perform fire

servicing duties efficiently. These differences then may lead to higher risk of damage or loss of life.”⁴

Funding for fire services should reflect needs and circumstances for fire services within a municipality. However, if local funding for fire services does not meet the requirements from growing populations or industry, it can become a challenge.⁵ The regionalization of fire services is generally based upon improved efficiencies as each community has the responsibility to keep its people and property safe.

The population for the respective areas is estimated to be (Census Canada 2016):

- Emerald Park-1,696
- White City-3,099
- Pilot Butte-2,137
- Balgonie-1,745
- RM of Sherwood-974
- Grand Coulee-649
- RM of Edenwold-4,490

The volunteer fire services sector has faced recruitment and retention challenges for years and it is not improving. Volunteer firefighters and officers have limited time available due to other personal and work-related commitments. During working hours, it is usually difficult to have firefighters readily available to respond to an emergency as many work outside of their community.

Issues and barriers impacting recruitment and retention of volunteer firefighters include the following areas:

- Employer-related - a lack of support of volunteer firefighting by employers.
- Family-related - volunteer firefighting requires a time commitment which separates firefighters from their loved ones at unpredictable times and being called away from work impacts the family income.
- Availability of people - many people work outside of the community during the day.
- Time commitment - there are increased demands on volunteers' time, and many ways to spend free time.⁶

As more demands are being placed upon the volunteer fire service, it is foreseeable that communities may choose to move to a regionalized model where

⁴ Coralejo M., et al (2018) *2018 Regional Emergency (Fire) Services Report*, University of Alberta Planning Program, Edmonton Metropolitan Region Board.

⁵ Coralejo M., et al (2018) *2018 Regional Emergency (Fire) Services Report*, University of Alberta Planning Program, Edmonton Metropolitan Region Board.

⁶ Volunteer Firefighters Recruitment and Retention Strategy (2010), Volunteer Alberta.

their fire department is part of a regional service that is providing fire and emergency services.

Prior to any regionalization occurring an assessment of the existing services, future needs, and type of service levels to be provided must occur. If improved efficiencies can be demonstrated through regionalization and political support is present, then formal steps can be taken to identify who takes the lead on the regionalization process. Regionalization of fire protection services will require support from all levels of government including the Government of Saskatchewan.

Steps to take to investigate regionalization include but are not limited to:

- Conducting a thorough analysis of the risks in the municipality in the form of a community risk assessment.
- Conducting an analysis of the fire departments.
- Consultations with the appropriate administrative staff, Reeve and Councilors for the municipality.
- Consultations with key stakeholders and taxpayers.
- Identifying the efficiencies in terms of cost savings and resource allocation.
- Identification of how taxes are imposed for fire protection services, so financing of operations and the provision of a capital budget are properly met.
- A formal plan and report be provided to each municipality involved with recommendations for consideration by all stakeholders.
- Collaboration-All stakeholders must be in support of regionalization.
- Relationships before regionalization occurs-Relationships are key to the success as anything less could be viewed negatively and as a hostile takeover by some.
- Partnerships-All stakeholders must be willing to partner in the regionalization and be willing to give and take at times.

For the regionalization of fire services to occur there must be the political will for such an initiative. A regional fire service can only exist if all stakeholders are part of the process and agreements and partnerships form the spirit of the regionalized fire service.

1.8.1 Present Status of Communities Fire Service

Rural Municipality of Edenwold

The 2016 census records a total population of 4,490 residents in the municipality which is characterized by low-density rural population distribution except in country residential development areas and Emerald Park. The towns of Pilot Butte, Balgonie and White City and the Village of Edenwold are located entirely in the RM of Edenwold. As noted in the Edenwold Official Community Plan, residential development is primarily focused within the community of Emerald Park and the country residential developments.⁷

Rural Municipality of Sherwood

The RM of Sherwood encompasses the City of Regina with the majority of its land base being agriculture. There are a variety of industries and manufacturing within the RM of Sherwood and more specifically north of the City of Regina.

A fire services agreement exists with the RM of Sherwood and is discretionary in nature, which indicates that RFPS reserves the right to use discretion in deciding whether it can respond into the RM of Sherwood. Determination of response capacity is due to the availability of manpower and equipment, weather conditions or other hazards that could jeopardize the safety of RFPS personnel, whether RFPS needs to recall manpower and equipment to a greater emergency within the City limits or the availability of manpower and the state of readiness of equipment in the department at the time of request for emergency services.

One option to improve the response time to the RM of Sherwood would be a partnership between RFPS and the RM of Sherwood where a fire station is built and maintained by the RM of Sherwood and staffed by RFP personnel and equipment. Additional benefits of having a station located within the RM of Sherwood is that RFPS personnel can conduct fire education and fire inspections in the industrial sections. This station could be strategically located so the response capacity serves the industrial areas of the RM of Sherwood Park and the northern boundaries of the City of Regina.

Emerald Park

Emerald Park is an unincorporated community in the Rural Municipality of Edenwold No. 158 and is 9 km east of Regina and adjacent to the Town of White City. Emerald Park is comprised of residential, industrial (Great Plains Industrial

⁷ RM of Edenwold 158, (2019) Official Community Plan Bylaw 2019-19

Park and Royal Business Park), retail and commercial businesses. Fire services are provided to Emerald Park by the White City FD and regionalization of fire services would need to focus on the White City Fire Department. RFPS should investigate the possibility of establishing a fire service partnership similar to that with RM Sherwood with Emerald Park.

1.8.2 Regionalization Challenges

It is critical that attention be given to the existing culture and pride that the respective fire departments have. As noted by Coralejo M., et al (2018) “A theme found within the study is the importance of maintaining and respecting the identity of each fire station while increasing the regionalization of fire services and cooperation. Many municipalities take pride in their individual fire stations, but regionalization can represent a threat to them. A need to address these concerns is essential to ensure acceptance of increased regionalization of fire services.”⁸

The Region of Windsor and West Hants Municipality, Regional Fire Services Review (2019) document found during their review process that there was no standardization of equipment purchases, personal protective equipment, different levels of service and standards and the policies and procedures were different among the fire departments. In fact, the six fire departments involved in the review were at arm’s length and independent from each other. It can be anticipated that there will be operational and governance differences in the fire departments identified in this regionalization scenario.

In Saskatchewan there is no provincial standard level of care when it comes to fire protection services. Essentially, every community decides on what level of service they want to provide. This would pose a challenge as a regional fire service would need to identify a standard level of training that every firefighter should meet. The expectations to have volunteer firefighters meet the same standards as those in RFPS would be unrealistic and in fact would discourage people from joining the fire department.

Some options available to review for firefighting standards and part of the process for regionalization of fire services would be the identification of minimum standards for firefighters and officers. In 2015 the Province of British Columbia developed and implemented the *Structural Firefighters Competency and Training Playbook*, while the Yukon Government implemented *Training Standards and Requirements* for the Yukon fire service and more recently in February 2019, in the Province of

⁸ Coralejo M., et al. (2018) *2018 Regional Emergency (Fire) Services Report*, University of Alberta Planning Program, Edmonton Metropolitan Region Board.

Manitoba, the Office of the Fire Commissioner implemented the *Guide to Service Levels: Fire Fighting, Organization and Deployment* and in Alberta, the Alberta Fire Service Core Competency Framework toolkit for community planning and emergency response. The development of a minimum set of standards for a regionalized fire service could be achieved by ensuring a training committee is formed with stakeholders from each respective fire department.

The operation of a fire department has become demanding in terms of meeting training standards, apparatus and equipment requirements, records management, operational and capital budgets and meeting occupational health & safety needs. The increasing costs for equipment and training poses challenges to the financial sustainability of some small fire departments. During the regionalization of the Halifax Regional Fire & Emergency is was noted that some volunteer fire departments had sufficient budgets for equipment, uniforms, and training, while others were challenged to equip their fire department. “Tax bases will vary and there will be direct correlation to the available funding and the level of service provided by the fire department. Another implication includes meeting the expectations of the community. The level of fire service residents expect, based on the amount of taxes they pay, can become troublesome.”⁹

If regionalization were to occur within the next 25-years, a governance model for the regional fire service must occur and include an organizational structure that would have divisions responsible for Fire Prevention, Training, Health & Safety, Equipment Maintenance, and Administration.

Regionalization Benefits

With the many challenges facing volunteer fire departments, there are benefits in a regionalized fire service that include:

- Increased administrative support
- Fire service coordinator to ensure proper records are maintained and available for audit purposes
- Fire Investigations - trained personnel that are considered an expert witness in a court of law
- Fire Operations Support - Maintenance of equipment and assets
- Professional Development and Training - training of firefighters, chief officers, and regional assistant chiefs
- Regional training facility

⁹ Coralejo M., et al. (2018) *2018 Regional Emergency (Fire) Services Report*, University of Alberta Planning Program, Edmonton Metropolitan Region Board.

- The same personnel accountability system to be utilized
- Emergency Management - a multi jurisdiction Emergency Measures Organization (EMO) that prepares for disasters and large-scale emergencies within the region
- Purchase, maintenance, and testing of equipment as per NFPA standards
- Equipment and personal protective equipment upgrades
- Consistency of equipment being used in terms of interchangeability
- Training consistency in terms of meeting a set standard

There are benefits to regionalizing fire protection services but any move to regionalize must be taken with all partners and key stakeholders supportive of the process.

1.8.3 Regionalization Summary

The implementation of a regionalized fire service can be expected to take years. The process will be lengthy in nature and will require patience and extensive consultations. As noted in the article *Amalgamation 10 Years Later*, to maintain the traditional pride of community, the old departments are still intact and the community name is on the side of their new trucks, as well as the Halifax Regional logo.¹⁰

Regionalization is not an easy process and key stakeholders must be identified beforehand. An account of the number of firefighters and fire chiefs must be determined and how they will be a part of the process and not bystanders without a voice. A regionalized fire department will require a unification of standards operating guidelines (SOGs) and new branding which will include truck decals, station signage, uniforms, and shoulder flashes.

The economic impact from the COVID-19 pandemic will force communities to review their essential services and how to pay for them. Regionalization is not a process to be forced upon communities, rather it is an evolution into a new model, a new way of conducting business and the creation of a new culture. EMT is not recommending regionalization at this time and the scenario provided may occur in the next 25-years as the demand for more services and more efficiencies is required from taxpayers and local authorities.

¹⁰ Silver, T. & Giggey, J (2007) *Amalgamation 10 Years Later*, Firefighting in Canada, <https://www.firefightingincanada.com/amalgamation-10-years-later-1288/>

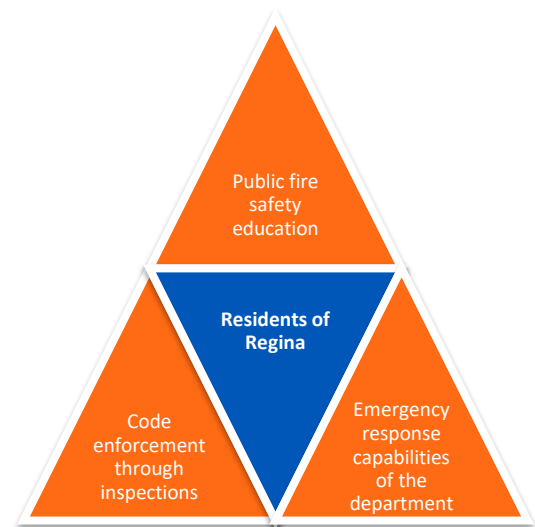
SECTION 2: Planning

Planning is a key function of any organization and should be done with a focus on the present needs of the community, coupled with its future growth and how this will affect the service demands on the fire department. The initial phase of such planning efforts is to identify the strengths, weaknesses, opportunities, and threats affecting the department and the community it serves.

2.1 Three Lines of Defense

In general, fire departments have identified three lines of defense to be utilized when planning to meet the needs of the community. By embracing and implementing these three lines of defense, the centre of focus is the safety of the community, based on education, enforcement, and response.

1. **Education** – Fire safety education is the key to mitigating the fire and life hazards before they start. With the growth of the community, how will the municipality continue to meet the fire safety educational needs of the community?
2. **Inspections and Enforcement** – If the public education program does not prove effective, the next step is for the fire department to enforce fire safety requirements through inspections leading to possible charges under the *Act*. Fire inspections are conducted to ensure that buildings have the required fire protection systems, safety features, and that the systems are maintained.
3. **Emergency Response** – If the first two lines of defense fail for whatever reason, the community, through its fire department, should be prepared to respond in an efficient and effective manner to put the fire out and/or mitigate the emergency itself. By evaluating the effectiveness of the fire stations, staff, and equipment, this report will be able to make recommendations for related efficiencies.



In conjunction with the three lines of defense, a key industry standard that outlines goals and expectations for a fire department is the NFPA. These standards are not mandated but do form the foundation of the fire services recommended best

practices. These NFPA standards are also utilized by organizations such as the FUS group to conduct their assessments of a fire department and the community. The CFAI and provincial Fire Marshal/Commissioners Offices and provincial fire schools also use them to form the foundation of their evaluation and training programs.

2.2 Industry Standards and Best Practices

2.2.1 NFPA 1201

To assist with Emergency Management & Training Inc.'s review, reference has been made to key NFPA Standards that identify services that should be offered and how they are to be delivered based on the composition of a fire department. One of the foundational NFPA Standards is Standard 1201 as it sets out criteria for providing fire and emergency service to the public.

NFPA Standard 1201 – Standard for Providing Fire and Emergency Services to the Public

Section 4.3.5 notes:

- The Fire and Emergency Services Organization shall provide customer service-oriented programs and procedures to accomplish the following:
 1. Prevent fire, injuries and deaths from emergencies and disasters
 2. Mitigate fire, injuries, deaths, property damage, and environmental damage from emergencies and disasters
 3. Recover from fires, emergencies, and disasters
 4. Protect critical infrastructure
 5. Sustain economic viability
 6. Protect cultural resources

To accomplish this, a Fire and Emergency Services Organization (FESO) must ensure open and timely communications with the Chief Administrative Officer and governing body (Council), create a masterplan for the organization, and ensure there are mutual aid and automatic aid programs in place, along with an asset control system and maintenance program.

To provide a fire department clearer focus on what the ultimate goals for emergency response criteria are, the NFPA suggests that response times should be used as a primary performance measure in fire departments. NFPA 1710 (refers to goals and expectations for Career Fire Departments) has been incorporated into the evaluation of the fire department's response and staffing needs. More discussion in relation to these two standards will be presented later in this document.

2.2.2 Commission on Fire Accreditation International

“When a Fire Department applies a model of risk assessment to help determine their level of emergency services commitment, they have moved from being reactive to being proactive.” – quote from CFAI overview information.

In the fire service, the NFPA standards are considered by many as the benchmark to strive for. Many of these standards have, to a large degree, been adopted and supported by numerous fire departments. The CFAI is an organization that has incorporated all national and local standards into an accreditation process, effectively becoming the model for best practices in fire services. This best practice is seen as a model of fire service excellence.

To accomplish this excellence model, the CFAI program revolves around 10 categories:

1. **Governance and Administration** – Includes such things as organizational reporting structure, establishing and regulating bylaw requirements, etc.
2. **Assessment and Planning** – Evaluating the organization in relation to future planning.
3. **Goals and Objectives** – What are the goals of the fire service? Do they have a strategic plan in place?
4. **Financial Resources** – Does the organization have sufficient funding in place to effectively meet the needs of internal and external stakeholders?
5. **Programs** – Includes fire prevention, fire suppression, training, and emergency management.
6. **Physical Resources** – What is the state of the fire stations and are they located in the best location to respond to the community in a timely manner?
7. **Human Resources** – Includes staffing of the organization in all branches as well as how the fire service works with the municipality’s Human Resources Department.
8. **Training and Competency** – Review of all training programs based on what the Fire Department is mandated to provide.
9. **Essential Resources** – This section covers such things as water supply, communications/ dispatch, and administrative services.
10. **External Systems Relations** – Includes such topics as mutual aid, automatic aid, third party agreements, etc.

These categories will be discussed within each related section of this FMP.

2.3 Strengths, Weaknesses, Opportunities, and Threats (SWOT)

The strengths and weaknesses portion of a SWOT Analysis are based on an internal review that identifies what is working well, along with recognizing areas for

improvement. The opportunities and threats portion of the SWOT are related to external influences and how they affect the operations and response capabilities of a fire department.

2.3.1 Strengths

- The City of Regina benefits from having seven fire stations located throughout the City. These stations are staffed full-time, 24/7. This equates to a consistent and dependable service for the community.
- There is fire prevention, public education, and code inspection programs in place throughout the City of Regina.
- A full line of training programs is in place that are coordinated and monitored by the Assistant Chief of Training.
- The Regina Fire & Protective Services has strong relationships with neighbouring departments and a long history of cooperative services.
- Regina Fire & Protective Services has a force of well-trained firefighters in relation to fire rescue, technical rescue, and medical response supporting the City.

2.3.2 Weaknesses

- Due to the anticipated growth of the City, RFPS will be challenged to meet the ever-increasing demands to come (specifically that of response times, staffing and a demand for prevention, education, and inspections of facilities).

2.3.3 Opportunities

- RFPS should review the present fire service agreements, emergency medical responses and bylaws to identify further efficiencies, cost savings.
- RFPS should explore partnership opportunities in terms of fire station design and community utilization.

2.3.4 Threats/Challenges

- The projected growth of the City of Regina and the increasing response times with no increase in RFPS staffing levels is a continuing challenge for RFPS.
- The projected growth in terms of diversity in the City of Regina will pose challenges for RFPS to become a more diverse fire department in terms of representing the community demographics.
- The costs of the COVID-19 pandemic and the revenue shortfall for the City of Regina will challenge RFPS to become more flexible in terms of providing fire and rescue services to the community.

The SWOT assessment needs to be monitored, evaluated and reported to Council by the Fire Chief to ensure that Regina Fire & Protective Services is meeting the needs and expectations of the community.

2.4 Stakeholder Consultation

2.4.1 Open House and Stakeholder Feedback

To get a complete understanding of how well Regina Fire & Protective Services is meeting the needs of its staff and the community, and to assist City Council in making strategic decisions for the future of the community, open house and stakeholder sessions along with external and internal surveys were conducted. Interviews were also conducted with the City's senior staff and Executive Leadership Team.

The following general comments were received from the community stakeholder meeting held on March 4, 2020. Feedback was elicited regarding five services provided by RFPS, including Fire Regulations, Emergency Preparedness, Response Times, Public Education and Workforce Diversity.

Fire Regulations

- Education and prevention enhancements was stressed in relation to the topics of smoke alarms and City fire bylaw requirements.
- Residential sprinklers are costly but there may be some cost savings in terms of fire insurance.
- More education to landlords and tenants is required.
- The number of rental properties is unknown in the City of Regina as there is no licensing required; this was viewed as a concern that needs to be addressed.

Emergency Preparedness

- Concern with rail derailment within the City of Regina; what more can be done by RFPS to help alleviate and/or mitigate this concern.
- How is the public notified of emergencies? More educational awareness needed in this area to inform the public.
- Lack of public knowledge about the City of Regina emergency plan; more educational awareness required.
- City of Regina has a Pandemic Plan; what is the plan and where does the public fit in?

Response Times

- Considered a number one priority for RFPS

- How do new residential developments impact response times?
- Desire by most, if not all the attendees, to have RFPS meet the quickest response time.

Public Education

- Use more social media, workshops, mailouts, community newsletters to educate and inform.
- RFPS should attend more community events.
- Target more newcomers and close the gap of cultural differences by providing information in other languages.
- More education to businesses, RFPS to build more partnerships with businesses.
- More education to landlords and tenants in terms of prevention, education, and property maintenance. This can be as simple as putting together an information brochure on the “What You Need to Know” highlights or as complex as designating an Inspector to create a yearly plan on providing informational sessions to property owners and landlords.

Workforce Diversity

- Understand that diversity is a focus to increase underrepresented groups including but is not limited to females, aboriginals, racial minorities, and LGBTQ.
- Build relationships first, then target minority groups for recruitment.
- First get into the community and then you are more able to attract diverse groups.
- Identify possible barriers relating to the hiring process.
- Do not just focus on firefighting positions, but other positions within RFPS as well.
- Mentorship program to help prepare future hopefuls for a job within RFPS
- High value in providing diversity training to RFPS.

Overall, the community stakeholder engagement meeting had positive feedback as attendees learned what RFPS was providing in terms of levels of service, response times and prevention and education.

On March 5, 2020, an emergency services partners stakeholder meeting was held with representatives from RPS, Coop Refinery, Regina Airport Authority, Saskatchewan Association of Fire Chiefs, Saskatchewan Public Safety Agency and the Regina Qu’Appelle Health Region. A summary of the feedback is provided below.

- There is an excellent working relationship between RFPS and RPS.

- A more efficient model relating to RFPS co-response to medical calls needs to be developed and more meetings need to occur with the Health District to improve communications and relations as well as protocols.
- More patient documentation is required when RFPS deals with patient care.
- Regina Airport Authority and Coop Refinery continue to build their relationship with RFPS and there are opportunities for improved service delivery.
- Regina Airport Authority would like to see RFPS have a tanker closer to the Regina Airport as they depend upon this for an airside water supply.
- Next Gen 9-1-1 needs to get addressed as it has significant budgetary impacts for RFPS and RFPS computer aid dispatch system should be able to interface with EMS to enhance response times.
- High demand being placed on RFPS for fire protection services in other municipalities may be a challenge for the Department.
- Succession planning and specialized training requirements should be further investigated.
- RFPS is well respected in the community.

2.4.2 Internal Staff Survey and Meetings Feedback

An internal survey was also conducted to obtain feedback from RFPS staff which included Operations, Administration, Training, Education, Prevention, Chief Officers, and support staff. Their 576 responses to the internal survey along with the following general comments were received, with EMT ranking the top three to five responses.

EMT wants to thank RFPS staff and stakeholders for taking the time to contribute to the surveys and stakeholder sessions.

How satisfied are you that you are well equipped to efficiently and effectively carry out your duties?

- i. Firefighters who are primary care paramedics not being utilized fully to their scope of practice and RFPS needs to work with the Saskatchewan Health Authority to expand the scope of paramedics and the use of medications for patient treatment.
- ii. Concerns over the staffing levels at Stations 2 and 5 as they are a single Engine Company station.
- iii. Health and safety concerns over the lack of a second set of turnout gear for firefighters and the number of times that firefighters have not found a proper fitting set or a set that was clean to use while their primary set is away for cleaning.

- iv. Fire Inspectors and Investigators are using personal vehicles for RFPS business and there are concerns regarding fair compensation and the lack of a professional image for RFPS.
- v. Lack of computer monitors being placed into stations that can be used for mapping and selecting the best route to an address.

Feedback was positive in terms of the frontline apparatus for the Department, but some comments focused on the desire for management to be more attentive to the suggestions brought forward in terms of apparatus design and ideas.

How satisfied are you that you are receiving the required training to perform your duties in an efficient and effective manner?

- i. Opinions voiced that the technical training needs to be improved and concerns of the Technical Rescue team being at Station 5 a one Engine Company station. Tech Rescue personnel are limited on what they can train on given the fact that tech rescue generally requires significantly more resources than a single Engine Company.
- ii. The Training Division would benefit from getting more feedback about the gaps and knowledge that frontline personnel have and how the training division can address them for example; a focus can be provided on nozzle training, fire flow paths, fire attack tactics and strategies, as well as more auto extrication with less reliance on e-learning.
- iii. Some frontline personnel have not participated in suppression or extrication training for several years and there are concerns over lost skills.
- iv. Platoon trainers are needed or an increase of the number of Training Captains in the training division as the loss of the Platoon Trainers has negatively impacted training within RFPS. (Completed)

How effective has RFPS been in planning for succession?

- i. Feedback was positive in terms of positions within the collective agreement, but in regard to out of scope positions the consensus was there was no succession planning key Chief officer positions such as Fire Marshal, Deputy Chief, Assistant Chiefs and Fire Chief.
- ii. The wage compression is a concern as members are more than willing to look at out of scope promotions, but the wage compression deters members from applying. Feedback was also received that taking an out of scope position in RFPS generally meant a pay cut.
- iii. Tuition reimbursement was available at one time for members that chose to explore post-secondary or specialty courses. The elimination of

this incentive has stopped members from seeking out further education, especially given the fact that there are no professional qualifications identified for out of scope positions.

In relation to duties you perform within RFPS, what would you say are the top three issues facing the fire service and/or community (in relation to fire safety) today?

This question had considerable responses and it was a challenge to pick the top five and for this question 6 common responses will be identified, and previously listed concerns will be marked with an asterisk.

- i. Staffing levels in the Prevention Division are concerning and need to be increased.
- ii. More prevention, inspections and education provided to property owners and landlords of apartment buildings in terms of what is expected and how to meet fire code and bylaw requirement.
- iii. Staffing levels and response times were a concern as staffing levels have not increased while response times and city boundaries have. In addition, staff are concerned over taking a truck out of service to prevent overtime costs.
- iv. Diversity needs to be addressed in the department.
- v. Concern with out of City responses and minimum staffing being sent to those incidents.
- vi. Reassign firefighters in Dispatch to operations and have civilians staff Dispatch.

* RFPS primary paramedics are not being utilized to their full capacity and RFPS should either expand their scope of practice or decided if primary care paramedics are needed.

* Technical training needs to be addressed and more specifically the training on high risk, low frequency events such as trench, confined space, and high-rise fires.

Within your scope of responsibilities in RFPS, are there any other services that you believe Regina Fire & Protective Services should provide, expand upon, or even reduce, and why?

Due to the positive response to the internal survey EMT feels it is prudent to identify the key points that staff provided, and the seven top points are identified below with common themes having an asterisk.

- i. Explore drone technology for RFPS for improved situational awareness.

- ii. Improve the working relationship with Regina EMS and have an audit to determine if patient care reports are being properly completed and provided to Regina EMS.
- iii. Increased use of fire stations as a community-based building.
- iv. Improve working relationship and programs with new immigrants to the City and educate them on the role of the fire department and remove the stigma of getting into trouble for calling the fire department.
- v. Increase the use of social media and public service announcements.
- vi. Review the hiring practices and explore the possibility of hiring non-qualified candidates and train and certify them through the training division to increase diversity.
- vii. Relocate the Technical Rescue Team to Station 4 which has 2 Engine Companies.

* Improve the education programs for property owners and landlords in terms of fire code and building requirements.

* Increases staffing in the Prevention division to meet the demand for services and to assign one position to building plan reviews.

Based on your area of responsibility within RFPS, if it were up to you, what would be different about Regina Fire & Protective Services 25 years from today?

It was reinforced during the consultation process with staff that they need to feel free to provide their thoughts on what can be different in the fire department in the next 25 years, and feedback was constructive in the answers to this question.

- i. Out of scope promotions to come from within the department
- ii. Every station to be properly equipped with monitors for mapping and highlighting the route to the incident
- iii. More technology in the form of tablets or laptops for preplans, building information, fire inspection history as well as GPS in every apparatus
- iv. All stations to be staffed by two Companies
- v. Have full time civilian dispatchers.
- vi. Conduct analysis on administration support services to determine if technology can be incorporated to improve or reorganize administration
- vii. Improve cancer prevention measures and have a washing machine in each station strictly for station wear
- viii. Revert to Regina Fire Department instead of Regina Fire & Protective Services (it must be noted here that this point was made during every

platoon meeting over several days).

Based on your area of responsibility within RFPS, if it were up to you, what would be the same about RFPS 25 years from today?

Staff were positive and there is little doubt that great pride is within the ranks of RFPS staff.

- i. Public education and community involvement.
- ii. Fostering of a positive working environment.
- iii. Promotions based upon most senior qualified.
- iv. The pride members have in the department.

Do you have any additional comments you would like to add about your thoughts on RFPS?

- i. The 25-year FMP is one of several studies and surveys and nothing changes in terms of budget or implementation.
- ii. The need for a succession plan.
- iii. Appears to be more cooperation between management and the union.
- iv. Consistency on turnout gear replacement.

2.4.3 Workforce Diversity Program

The Official Community Plan (2017) states that, “It is projected that 100,000 more people will make Regina their home, and many of those new residents will be recently landed immigrants. The city’s projected rate of growth and increasingly diverse population make critical the process of developing a long-term plan.”¹¹

As the City of Regina grows over the next 25-years it is imperative that RFPS make diversity a priority within the department. A diverse workforce has many benefits which include, a broad range of talent, perspectives on issues, cultural knowledge and backgrounds, different religions, and a connection to the community. Implementing a diverse workforce program for RFPS must be well planned and unique to the department. Having a workforce diversity program and not focusing on it will only end in failure. During the stakeholder consultations several points were made on how to improve the diversity of RFPS and these points are relevant and critical to the success of a workforce diversity program within RFPS.

Stats Canada defines visible minority as “Visible minority refers to whether a person belongs to a visible minority group as defined by the *Employment Equity*

¹¹ Design Regina, Official Community Plan 2017

Act and, if so, the visible minority group to which the person belongs.

The *Employment Equity Act* defines visible minorities as "persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in colour." The visible minority population consists mainly of the following groups: South Asian, Chinese, Black, Filipino, Latin American, Arab, Southeast Asian, West Asian, Korean and Japanese."

'Aboriginal identity' includes persons who are First Nations (North American Indian), Métis or Inuk (Inuit) and/or those who are Registered or Treaty Indians (that is, registered under the *Indian Act* of Canada) and/or those who have membership in a First Nation or Indian band. Aboriginal peoples of Canada are defined in the *Constitution Act, 1982*, section 35 (2) as including the Indian, Inuit and Métis peoples of Canada.

In the City of Regina 19% of the population¹² identifies as a visible minority while 10% identified as Aboriginal and 28% being female age 20-59. Upon review of RFPS 2020 Annual Equity Monitoring Report, RFPS has a fire department staffing of 1.6% visible minority and 6.9% Aboriginal as full-time equivalents. As the City of Regina continues to grow and is expected to have an increase of 100,000 in the next 25-years, it is imperative that RFPS take the opportunity to create a staffing model representing the makeup of the City of Regina with an increase in visible minorities and Aboriginal identities.

EMT has reviewed and will reference the Calgary Fire Department's Diversity & Inclusion Framework program (which has been successful for Calgary Fire). This noted program can provide guidance for RFPS in creating a workforce diversity program specifically designed for the Department.

The fire service is a paramilitary organization and has served the profession well, but as noted in the Calgary Fire Department Diversity & Inclusion Framework program, "This 'tight culture' has served the firefighting purpose well as team members must rely heavily on one and other in life-threatening fire and rescue operations. This need has not diminished; however, the nature of the fire service and social norms and expectations are shifting, which has direct impacts on how our organizational culture is expected to evolve. As a culture, we also must adapt as predominant social values, such as respect for democracy, human and equality

¹² Stats Canada 2016 Census.

rights, and accommodation of religious and cultural difference, intersect with our own transitions and historical practices.”¹³

Making large or subtle changes to any organizational culture takes time and effort. The Calgary Fire Department (CFD) recognized that the change of accommodating diversity is a process of mutual accommodation where both the organization and the persons entering it must change. For the workforce diversity program to be successful, the CFD ensured that management, union, employees, and the City of Calgary were committed to the program.

The CFD made recruitment a key initiative and developed a guide to reach out to diverse groups within the community and through the awareness, recruitment and attraction strategies outlined in their plan, they are able to find the best possible talent to join the department. As noted during the stakeholder consultations for RFPS FMP, the following suggestions will make a positive impact on improving workforce diversity within RFPS.

- Build relationships first, then target the minority groups for recruitment.
- First get into the community and then you are more able to attract diverse groups.
- Change or remove possible barriers relating to the hiring process.
- Do not just focus on firefighting positions, but other positions within RFPS as well.
- Mentorship program to help prepare future hopefuls for a job within RFPS.
- High value in providing diversity training to RFPS.

There will be challenges with cultures and how they view the fire service or authority, and, in many cases, there will be financial challenges for an individual to achieve the prerequisites for RFPS hiring process. There are two options to overcome the financial challenges for formal fire training:

1. The implementation of a mentorship program can help identify individuals that want to have a future with RFPS and a business case can be made for Federal or local business funding to support a scholarship for the individual to attend a fire school to receive the credited training.
2. RFPS conduct in-house training for recruits that are from a visible minority or Aboriginal background and train them to NFPA 1001 Level 2. These individuals would be identified through a diversity program implemented by RFPS where their skills, education and character make them suitable candidates for RFPS. The in-house program could partner with local

¹³ The City of Calgary Fire, Diversity & Inclusion Framework; An important part of Workplace Psychological Health & Safety, 2015.

organizations to provide cultural awareness education for the fire service. There are many benefits to this approach as RFPS has the facilities and staff to meet this need and recruits are also able to get engrained into the culture of RFPS. This would also be a great starting point for educating recruits on the importance of a diverse and respectful workplace. By accomplishing this, RFPS could take a leadership role in incorporating diversity and fire fighter training.

The CFD Diverse & Inclusion Framework has been very successful. Of significance is that CFD believes, “our staff act in good faith and mistakes that occur are a result of changing workplace expectations to which our traditional culture is adapting. Behaviours once considered acceptable may no longer be and we will focus first and foremost on creating awareness and clarity among all staff regarding respectful, appropriate workplace behaviors.”¹⁴

With the anticipated growth of the City of Regina, it is imperative that RFPS make diversity a priority in the hiring of future employees. The individual(s) responsible for the development and implementation of a workplace diversity program must be cognizant of the time and effort required to reach out to the community to build relationships and attract suitable candidates for RFPS.

At the end of this section, recommendations are made based upon an analysis of the internal surveys, external stakeholder consultations and feedback during the master planning process.

¹⁴ The City of Calgary Fire, Diversity & Inclusion Framework; An important part of Workplace Psychological Health & Safety, 2015.

SECTION 3: Department Staffing

Staffing needs were identified as a priority in which Emergency Management & Training Inc. was to review the capabilities of existing staffing and identify future needs for each of the following branches: Administration, Suppression, Training, Fire Prevention & Public Education, Communications, and Mechanics.

3.1 Staffing Considerations

When a community considers the need for the number of fire service personnel, there is no actual standard that dictates how many personnel are required within a population or whether the fire service needs to be full-time, composite, or volunteer in its service delivery format.

As a general guide, some communities refer to other similar sized municipalities in the determination of firefighter staffing numbers and types (i.e. full-time or volunteer). It must be kept in mind, however, that every community is unique in its geographical composition, population demographics, and size of residential, commercial, and industrial sectors. Therefore, community comparisons should be utilized with all the aforementioned information in mind. Due to the challenges related to growth and expansion with the City of Regina, a good comparator will be the City of Saskatoon.

TABLE #1: Comparable Municipalities

Municipality	Population	Suppression	Fire Prevention	Training	Communications	Administration	Apparatus & Equipment	CEMC	Maintenance	Fleet	Total FT Staff
Ajax	127,000	84	7	2	13	7					113
Oshawa	160,000	161	11	3	16	9					200
Whitby	111,000	132	7	3	16	8					166
Richmond Hill	196,000	157	10	3	12	6 + 1 (Tech)				1	190
Burlington	184,000	172	8	3	11	7		1	3		205
Waterloo	123,000	116	6	4	0	6	8				140
Greater Sudbury	162,000	112	10	6	0	6				3	137
Cambridge	130,000	184	7	5	1	6					203
Regina	237,000	256	8	5	12	8	12		2		293
Saskatoon	272,000	280	15	5	12	10	15		5		329
Kitchener	234,000	183	13	3	17 + 3 (Alarm Monitor)	10	3				232
Newmarket (Central York)	74,000	140	7	3	0	5					155
Oakville	206,000	205	10	5	0	6					226
Barrie	141,000	142	8	5	10	7					172
Guelph	132,000	149	8	2	7	8			1		175

Currently Regina has one RFPS staff member per 902 people. Saskatoon has one Fire Department staff member per 827 population. Saskatoon has a 9% higher staffing per capita ratio to the of Regina. One key area is that Saskatoon has more than double the number for fire prevention staff as does Regina.

Regina has 1 firefighter for every 902 residents, whereas Saskatoon has 1 firefighter for every 827 residents.

TABLE #2: Regina/Saskatoon Staffing Comparables

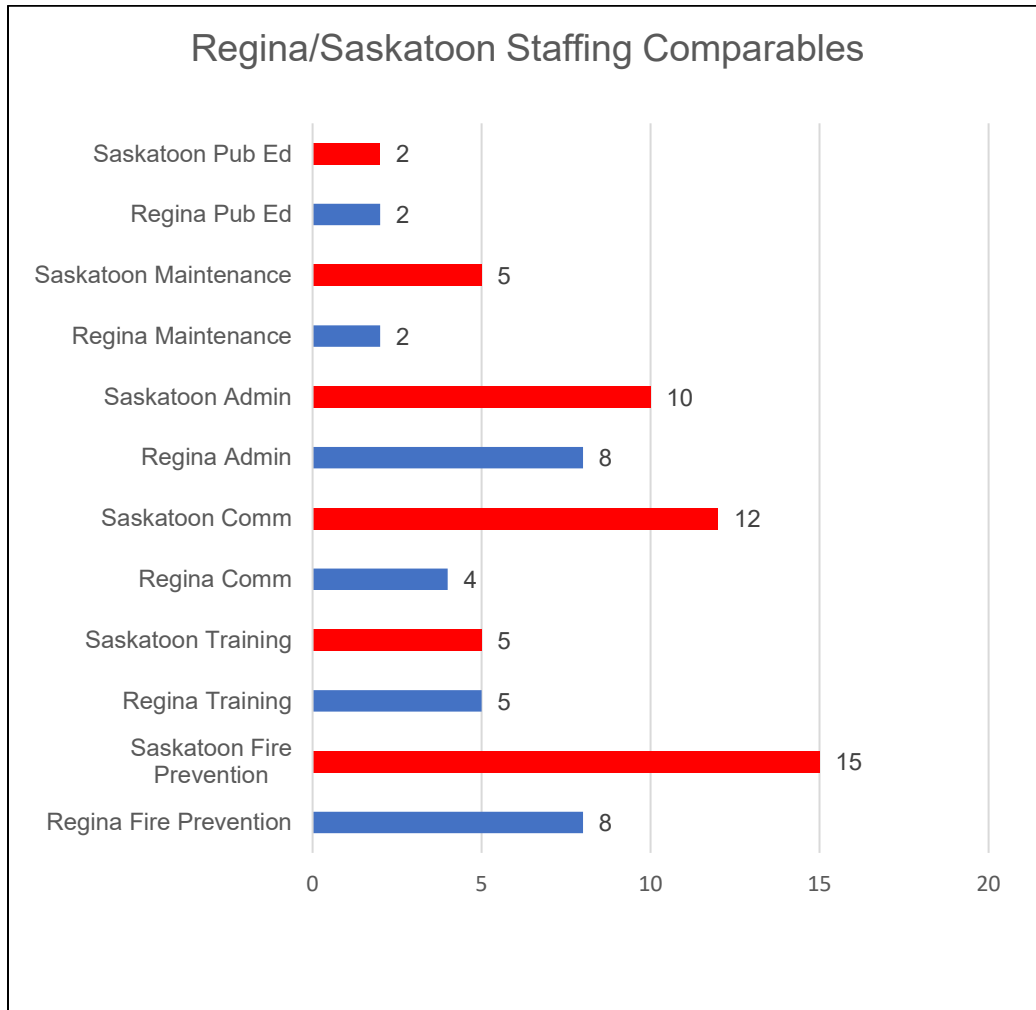
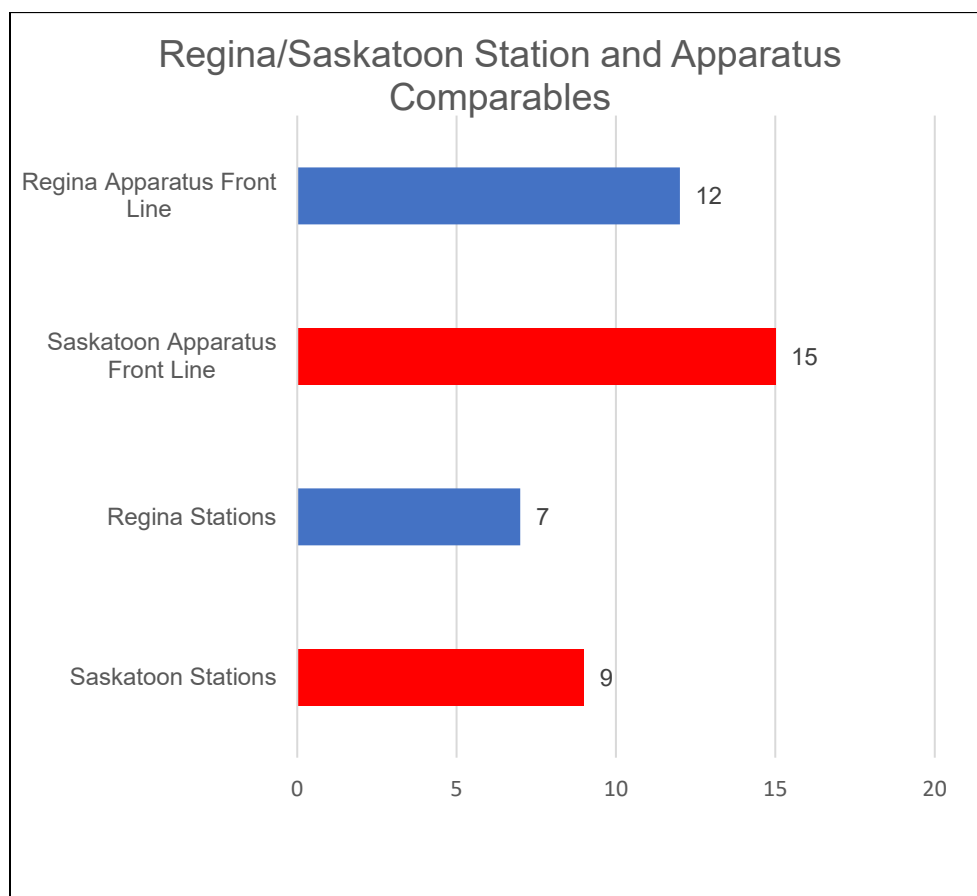


TABLE #3: Regina/Saskatoon Station and Apparatus Comparables



Having noted that there is no standard that recommends a firefighter per population quota, a department can refer to the NFPA 1710 standard on Career Fire Departments. This standard identifies a recommended staffing level per responding company. Other NFPA Standards also make recommendations regarding such things as conducting calculations for fire prevention staffing needs. In relation to firefighters, the NFPA 1710 recommends that three firefighters and one officer, for a total of four personnel, should be on the first responding fire truck. Presently, Regina Fire & Protective Services has this level of staffing on all their front run units.

All the previously noted information should to be taken into consideration when assessing staffing levels within RFPS. As a general guideline, when considering the overall staffing needs for RFPS, some of the key questions that should be considered are:

- Is there a proper level of senior staff to manage the Department and its divisions?

- Is there adequate administrative or management staff to effectively deal with such things as records management and addressing day-to-day operations of the Department?
- Is there a need for other support staff for vehicle and facility maintenance?

3.2 Professional Services Branch

The Administration Office is located at RFPS Headquarters and is also the location for the Communications Centre, Technical & Administrative Services, and Fire Marshal - Prevention, Education & Training, and Safety & Logistics Division are in the Education and Training Centre building next door. The senior officers include the Fire Chief, two Deputy Fire Chiefs, Manager of Emergency Preparedness, Assistant Chiefs, and the Fire Marshal.

The CFAI program has a specific section that evaluates the administration component of a fire department. In this section, the following points are noted:

Category 9C: Administrative Support and Office Systems:

Administrative support services and general office systems are in place with adequate staff to efficiently and effectively conduct and manage the agency's administrative functions, such as organizational planning and assessment, resource coordination, data analysis/research, records keeping, reporting, business communications, public interaction, and purchasing.

Based on the review conducted by EMT, the present Administration Division is well configured and has adequate resources to meet the needs of the Department.

3.3 Fire Prevention and Public Education

3.3.1 Fire Prevention Division

Fire Prevention has been identified specifically under the ***Design Regina – Official Community Plan*** (Section D9 11.12) as a component of managing the health and safety of the community and the importance of working with other government, agencies and stakeholders to deliver programs (Section D9 13.13.1).

RFPS Fire Prevention Division is staffed with seven Fire Inspectors. All seven report to the Fire Marshal and are qualified as per NFPA 1033 *The Standard for Professional Qualifications for Fire Investigator* and NFPA 2013 *The Standard for Professional Qualifications for Fire Inspector and Plan Examiner* and certified by the International Fire Service Accreditation Congress (IFSAC). The seven fire inspectors are assigned to one of the seven city districts and assigned to a specific fire station. The Fire Inspectors are on a regular on-call rotation. In 2019, the Fire

Inspectors were on a shortened on-call rotation resulting in staff doing more on-call rotations and covering the workload in absent districts.

Responsibilities for fire the Fire Prevention Division are aimed toward fire prevention, inspections of various occupancy classifications; code enforcement and prosecution for fire code and municipal fire bylaw infractions; fire investigations to determine origin and cause; and building plan reviews, so that codes are met.

The Fire Prevention Division strives to complete the annual provincially mandated inspections for the 300 licensed daycare and long-term care facilities. In addition to fire inspections and request for inspections, the Fire Inspectors are still required to respond to the daily inquiries and complaints regarding codes and standards and information for the re-mortgaging of commercial properties.

In 2018 *Bylaw No. 2018-49, The Regina Fire Bylaw, 2018* was approved by City Council and replaced the *Regina Fire Bylaw 2005-18*. The bylaw provides modifications of the National Fire Code (NFC) and adapts other fire prevention standards, adopts a licensing process for fire protection equipment inspectors and the regulation of fireworks and pyrotechnics. The bylaw also identifies the fees for responses to false alarms and facility inspections.

The Saskatchewan *Fire Safety Act* (FSA) adopts the NFC 2010 Edition. The NFC references the National Building Code of Canada (NBCC) in some instances. Fire Prevention personnel are not responsible for the enforcement of the NBCC but in some instances they are permitted to enforce portions of the NBCC. More typically though, Fire Prevention staff work closely with the Regina Building Standards and Zoning to support code enforcement.

One Inspector is dedicated to building plan reviews that involve sprinkler systems, fire alarms and high-risk occupancies. Fire Prevention staff also strive to accompany City building standards inspectors on newly constructed buildings prior to occupancy to find and correct fire code deficiencies. This process takes extra time and effort initially, but the goal is to find and resolve the code deficiencies before occupancy of the facility, so Fire Prevention staff do not have to return and deal with the building at a later date. Additional formal training is required for a fire inspector to conduct larger plan reviews, and RFPS should pursue this training for more inspectors so the Fire Marshal can focus on strategic planning for each year. A one-week training program provided by the Justice Institute of British Columbia has been successfully utilized in the past where the fire inspector participated in online sections and classroom sessions. This program provided the fire inspector

with a well-rounded knowledge of the review process and EMT recommends that at least one more fire inspector be provided this training to assist with plan reviews and permit the Fire Marshal to plan and coordinate inspections for the City of Regina.

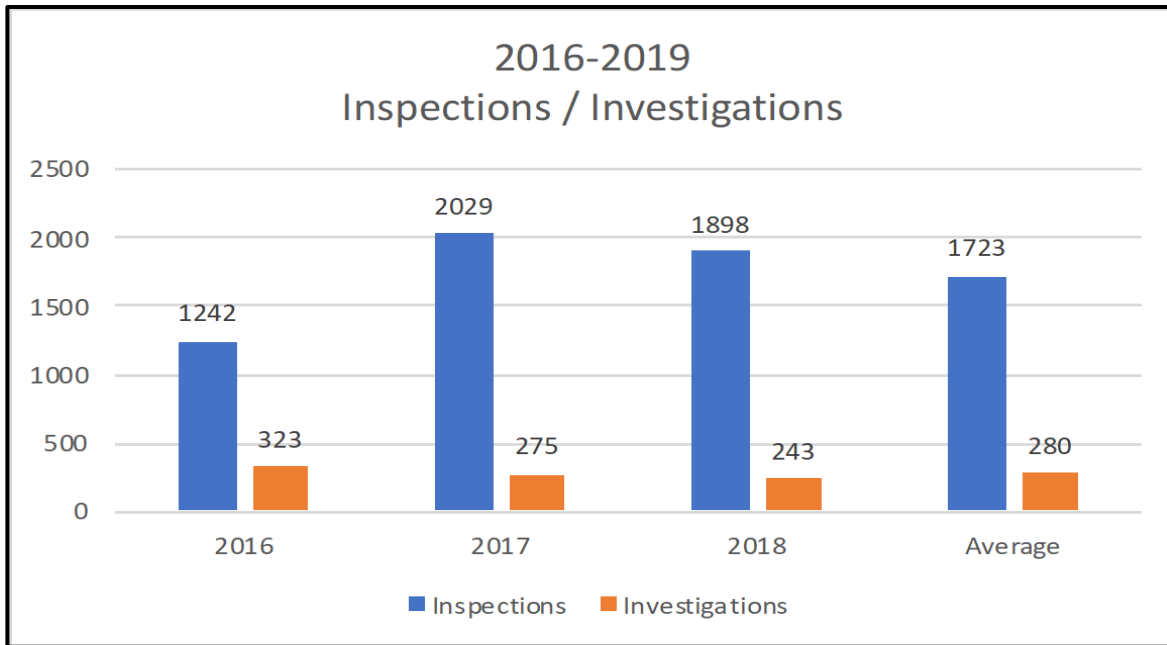
In the 2017 Regina Fire and Protective Services Standards of Cover document, it was recommended that the department ramp up Suppression Division supported inspections to 2,000 properties annually, to be shared among the four platoons. Information from the Prevention Division indicates that the Suppression Division inspections are going well, and the platoons are completing their inspections as scheduled. The plan is to have all properties identified in this program to be inspected on a five-year cycle. The company inspections are a positive for RFPS and in 2020 the program will focus on large malls in Regina. The success of the Suppression Division inspections cannot be over emphasized as this program allows crews to engage with the public, provide an initial fire inspection of a property, and report any concerns to fire inspectors.

The Standards of Cover document also recommended that by 2020, the Department would complete pre-incident plans for more than 500 identified properties and begin a three-year cycle of re-inspections to ensure that the pre-incident plans are current. The Department made an effort to meet the 500 properties but has fallen short of that goal by only completing 100 pre-incident plans. It has not been determined how or why the Department has not been able to complete the 500 pre-plans, but several factors can impact such a program such as call volume, staffing levels, and daily operational priorities.

Currently, when pre-incident plans are completed, they are submitted to the GIS planner who then creates a preplan that is placed into the station. The preplan is a laminated paper form that is placed near apparatus and readily available for the officer before responding to an incident. The Standards of Cover document recommended that RFPS implement access to electronic versions of the pre-incident plans and RFPS has implemented on-board computers so preplans can be uploaded and quickly accessed by responding personnel.

As noted in the following diagram, the Prevention Division conducts on average 1,723 inspections and 280 fire investigations per year.

FIGURE #5: Fire Prevention Division Yearly Inspections & Investigations



3.3.2 Public Education

In 1998 RFPS initiated the Keeping Our Community Safe Coalition after a series of fires that were set by six 11-year-olds. The Coalition is a city-wide program that is community-based and utilizes a school centered safety model. In the last 22 years, prevention and education has become a part of RFPS culture and in 2019 fire prevention and education components were added to the fire officer training program. Initiatives like this demonstrates the commitment that RFPS has to its community in relation to fire safety.

The two key strategies embraced by RFPS staff are intervention and education which reinforces the public education goals of changing unsafe behaviors. These two strategies form a solid foundation in the prevention culture within RFPS as fires are not just looked at from a fire department perspective but viewed as a community problem.

Although prevention and education are now rooted within the culture of RFPS, the two Public Education officers take the lead roles in community-based intervention and education strategies. The Fire Officers have a key role with their leadership and frontline delivery while the public education officers focus on program development, partnership leadership, statistical analysis, internal & external training, and resource development.

The Public Education Officers are highly trained, and both meet the professional qualifications of NFPA 1035, *Standard for Professional Qualifications for Public Fire and Life Safety Educator*. In 2016 RFPS eliminated four community relations

officer positions and since these four positions supported the public education officers with program delivery, the work duties of the public education officers remain high. The 2017 Accreditation Report recommended that the workload of the two public education officers be evaluated as these positions play a key role in the health and safety of the public in Regina. During interviews with the Public Education Officers, it was clear that they are both very passionate about their roles and the positive effect it has in relation to fire safety. Even with their high workloads, their energy levels and dedication to RFPS program is to be commended.

None-the-less, it is recommended that a formal evaluation of the workload of both public education officers be completed in 2021. As the population grows, so will their workload. As public education is the front line of public safety, this unit needs to have the support required to continue to meet the Department's fire safety education goals and expectations.

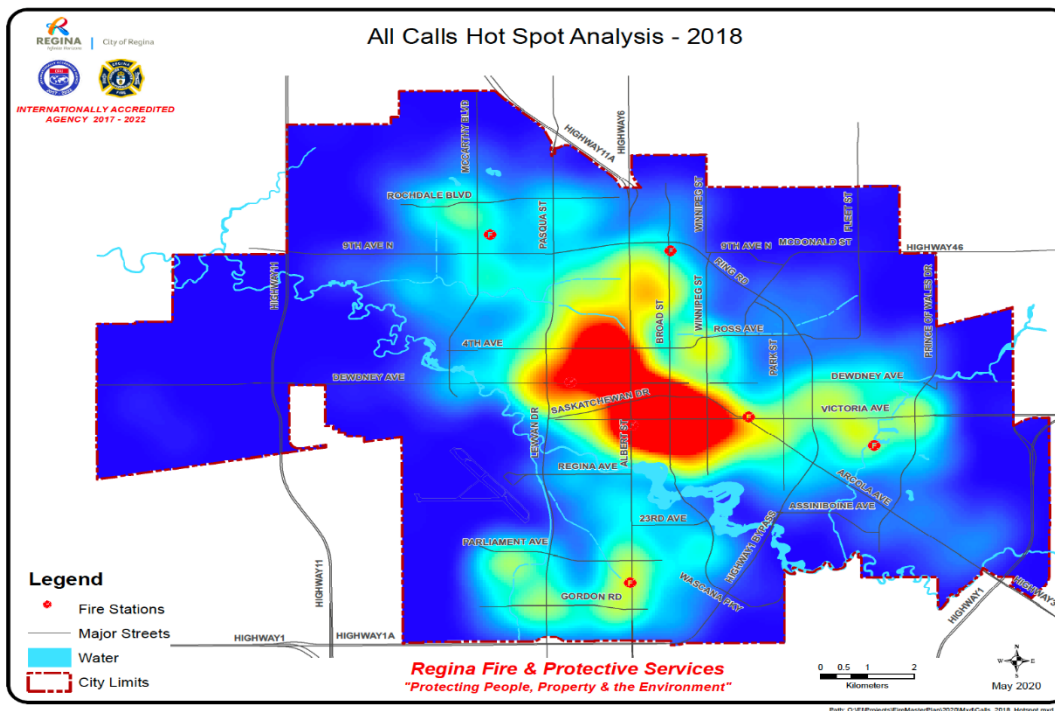
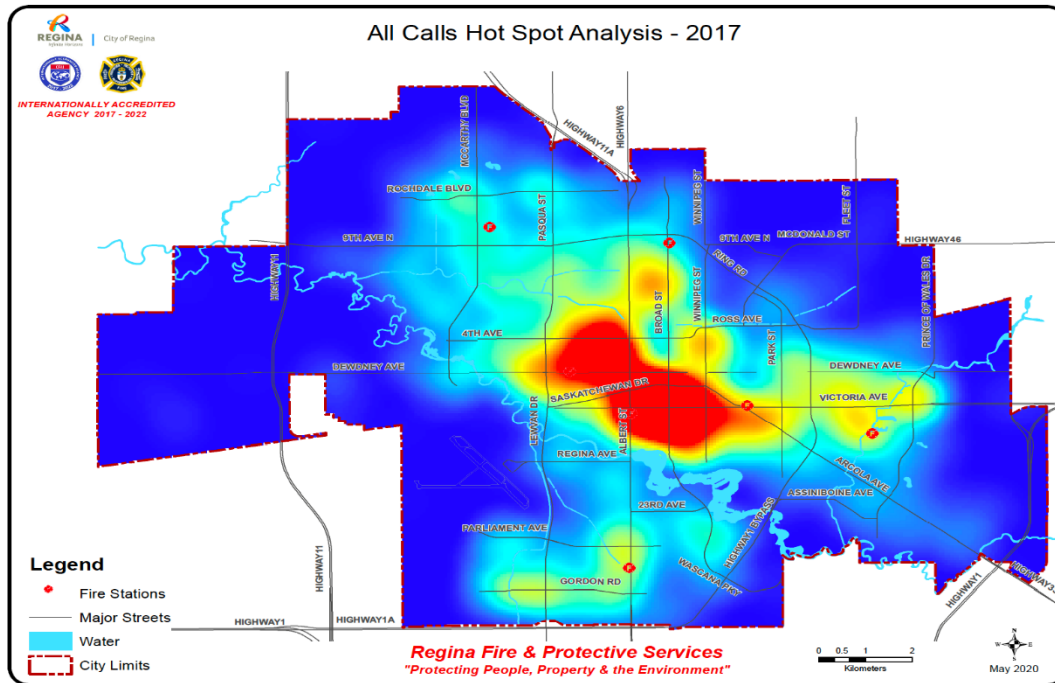
RFPS has identified a concentration of "at risk" populations (low income, low education, single parent families, seniors, aboriginal populations, and higher unemployment) into a risk band of approximately twenty square kilometers in the City. The risk band also includes inner city neighborhoods that are typically characterized by older homes, smaller lots and with limited spatial separation between structures.¹⁵ For the City of Regina, 61.3% of fire fatalities took place in the four lowest income neighborhoods from the years 1995 to 2015.

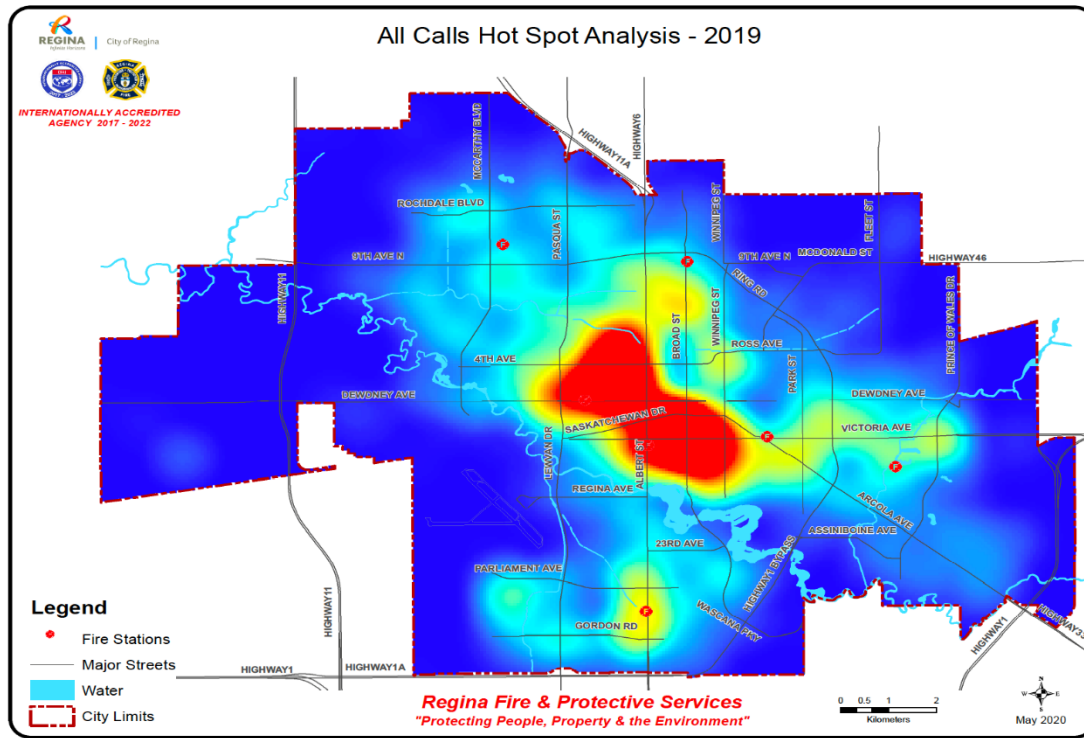
RFPS is data driven; this information is used to map fire incidents and RFPS has identified five hotspots that typically have higher call volumes, arson, and fire fatalities. RFPS has responded to this data by targeting public education activities in the area and has strategically placed stations, apparatus, and personnel to meet these demands. The Department also has three fire stations strategically placed and staffed in the risk band with each station staffing two responding apparatus and specifically deploy this model to provide an effective level of service based upon quantifiable data.

As noted in the following three heat maps, it can be seen that the highest concentration of calls occur in the downtown core of the city and that the current station locations are well placed with regards to the call densities. Further, the call densities have been consistent from 2017-2019.

¹⁵ Regina Fire and Protective Services 2017 Standards of Cover

FIGURE(S) #6: Annual Calls Hot Spot Analysis





An analysis of the data collected by RFPS in the Flexible Data Management System (FDM) has some weaknesses and RFPS has recognized this and is working towards a new fire data collection system. The data collection process had gaps in how a residential fire was categorized as officers and fire inspectors could choose from a wide variety of codes with similar wording but with significantly different meanings. For example, in terms of a residential fire, RFPS defines a *residential fire* as “any incident that causes damage to a home.”¹⁶

RFPS has recognized that the different coding being used by officers can cause inconsistencies and inaccuracies in the data analysis and is working with the Fire Inspectors to develop a new data collection procedure that will provide RFPS with not only the number of fires but information on who is starting them (target audiences) and what they are doing to cause them (unsafe behaviors).¹⁷

RFPS recognizes the importance of being proactive and studied the Portland Fire Department (PFD) Blueprint for Success model. The PFD has recognized, as does RFPS, that lower education, poverty, and mental health can contribute to increased fire call volumes and fatalities. The PFD Blueprint for success is based

¹⁶ What's New? What's Happening? Public Education at Regina Fire & Protective Services 2019-2021.

¹⁷ What's New? What's Happening? Public Education at Regina Fire & Protective Services 2019-2021

upon several factors and RFPS has utilized their own model from 1998 to expand its prevention and education blueprint in the City of Regina and within its own ranks. These factors include:

- Through statistical analysis and partnerships, RFPS builds prevention and education programs based upon the unique needs and threats in a neighborhood.
- The PFD Blueprint for Success model empowers fire station officers to have the autonomy to be innovative in addressing the needs and threats in their respective neighborhood. With the addition of the prevention and education component in the fire officers' program, RFPS has an opportunity to provide more autonomy to fire officers to address specific needs in their respective districts.
- The Keeping Our Community Safe Coalition establishes key multi-agency partnerships with Health, EMS, RPS, addictions, and other community leaders where holistic collaboration and planning take place to make specific neighborhoods safe and viable. By identifying root causes, agencies can collaborate on mitigating issues and working towards a vibrant and healthy community. This is in concert with the ***Design Regina Official Community Plan 13.13.1*** to *collaborate and work with other levels of government, stakeholders, and the broader community to deliver, where feasible community education, outreach, and programs on crime and fire prevention and disaster survival.*
 - From 2014-2015 RFPS partnered with the University of Regina and initiated the Cooking Fire Research Project where over 800 cooking fire incident surveys were analyzed to identify behaviours and factors of cooking fires. Through this analysis the programs were developed to address behaviours that cause cooking fires.
- The PFD recognized that the fire service is typically a “top down” military structure that can suppress innovation. Empowering staff to come up with ideas to address community needs is a proactive step in prevention efforts. The RFPS public education officers have worked miracles on little or no budget and have been very innovative in terms of program costs and delivery. They have been empowered to explore innovative ways to implement programs and it will be desirable to have the station officers empowered in the same fashion as they can clearly take a lead role in prevention and education within their response district.

The public education programming has decreased fires significantly through the hard work of the frontline staff and the public education officers. The core activities include fire station tours, preschool visits, safety walks, smoke tunnel fire survival

activities and babysitting classes. In 2018 staff delivered 443 educational and promotional programs impacting over 22,000 children and over 17,000 adults.

Community Partnerships

Community partnerships continue to be fostered between RFPS and other stakeholders because of the trusting relationships among partners. As such, programming continues to be developed and delivered. New programming includes:

- **Expanded Cooking Fires Public Education Program:** This program identifies the priority audiences as a result of the data collected from the 2014-2015 cooking incident surveys.
- **Fire Safety Curriculum for Newcomers:** The delivery and development of fire safety resources for the Newcomer audience. RFPS is working with Newcomer Settlement Organizations to provide resources and presentation to Newcomers.
- **Youth Fire Setter Intervention Program Partner and Curriculum:** RFPS has partnered with the Eagle Heart Centre to work in partnership with the Youth Fire Setter Intervention Program and to develop a new Indigenous cultural curriculum. The Eagle Heart Centre will also provide additional support for fire setting children and their families.

The two Public Education Officers continue to ensure that education and awareness initiatives exist that deals with the identification, development, and implementation of community programs. They have communicated and passed along their knowledge and expertise in terms of RFPS prevention and education programs at conferences in Canada and the U.S.

During the community stakeholder engagement session, it was evident that the Public Education Officers are well respected and known in the community. It was suggested, however, that there is still a need to be more active in social media, targeting business owners and building partnerships with business in Regina, and closing the gap of cultural differences for immigrants by providing fire prevention/education material in several languages.

Based on EMT's review, it is recommended that a more formal social media program be implemented where prevention, education, and suppression activities are communicated to the public. Also, it is recommended that Due to the anticipated and continued increase in newcomers to the City of Regina, it is imperative that prevention/education information by translated into several languages.

3.3.3 Prevention & Education Going Forward

The Keeping Our Community Safe Coalition develops and implements fire education programs that are unique to the specific life safety needs of inner-city students and families. To ensure that the programs are current and based upon the dynamics of the risk levels, they are evaluated continuously and redeveloped every two years.

The *Design Regina, Official Community Plan* recognizes that as Regina grows it will face financial limitations and the costs associated with growth must be considered. The Regina City Priority Population Study (2011) suggests that the number of immigrants living in Regina over the next twenty years will be significant. The number of new immigrants will grow from the estimated 18,500 in 2011 to 48,100 in 2020 and 87,200 in 2030. This projection increases from the current estimate of 10% to 20% by 2019 and 33% by 2030. This study further suggests that the newer immigrants to Regina and Saskatchewan will be more likely to be economic immigrants and less likely to be refugees. Increased immigration is recognized as a key factor in Regina's population growth and the anticipated demands for a wider range of services from the City. The increase in population and improvement of existing neighbourhoods and the development of new ones will require more from RFPS.

Fire prevention programs are utilized to prevent fires and ideally a methodology can be used to predict them as well. RFPS public education programs performance objectives are based upon the need to maintain the current service delivery levels of programs and activities, and established partnerships and coalitions, aimed at decreasing the fire risk in the high fire-risk neighbourhoods, and secondly to develop, implement and evaluate new programming, and explore new partnerships to address emerging fire risk trends.¹⁸

The prevention and education programs of RFPS have evolved significantly over the past 22 years in terms of identifying the target audience and the creation of programs and messaging. A holistic approach to fire prevention and education can exist and be expanded upon in the future to deal with not only fire safety concerns but overall health and safety needs in the City of Regina.

RFPS station officers continue to collect cooking fire incident information, and this will be analyzed by the University of Regina professor Rozzet Jurdi-Hague from

¹⁸ Regina Fire and Protective Services 2017 Standards of Cover

2016-2019. Without seeing the trends/numbers from the 2016-2019 period, the recommendations for cooking fire safety programs is limited.

The future is about innovation and partnerships and a great example is the Mamaweyatitan Centre (Cree word meaning “let’s be all together”) where a central building houses multiple tenants including the Regina Public Library’s Albert Brand and Regina Public Schools Scott Collegiate. The future of fire safety and education for RFPS can follow the same model in terms of resources and program development.

As the population grows and more demands are placed upon the public education officers, RFPS should plan and budget for an additional staff member to lead fire and health & safety programs for the City of Regina. This staff member must be qualified to lead a holistic and community-driven approach. This position can be funded by multiple agencies that impact the health and safety of residents in the City of Regina (approximate costs \$100,000 excluding benefits).

Technology Consideration

- New coding for residential fires should be implemented into the FDM for 2020 and this new coding be part of the fire and education component in the fire officer program.
- The pre-incident program needs to be evaluated to determine if the 500 properties was a realistic number. Pre-incident planning requires a significant amount of time and an analysis should be conducted to determine an achievable number for pre-incident plans, along with confirming that the present programs are meeting the needs of the Department.

TABLE #4: CFAI Recommended Inspection Schedule

In the 2017 Standards of Cover, the Department established a benchmark for the inspection schedule. RFPS Fire Prevention Division is endeavoring to meet this benchmark. As such, the Division should be commended for its ongoing efforts.

Group	Division	Occupancy Classification	Occupancy Name	RFPS Benchmark Objectives
A	2	Assembly	Elementary & Secondary Schools	Annually
A	2	Assembly	Day Care Centres	Annually
A	-	Assembly	Other Assembly	3 Year
B	1	Detention	Jails, etc.	3 Year
B	2	Treatment	Hospitals	Annually
B	3	Care	Nursing Homes	Annually
C	-	Residential	Personal Care Homes	3 Year
C	-	Residential	Approved Group Homes	1-3 years, as identified
C	-	Residential	Apartments-Low-rise	3 Year
C	-	Residential	Apartments-High-rise	3 Year
C	-	Residential	Senior Independent Living	Annually
D	-	Business & Personal Services	Offices, barbers, etc.	5 Year
E	-	Mercantile	Stores, Shops, etc.	5 Year
F	2 & 3	Medium & Low Hazard	-	5 Year
F	1	High Hazard Industrial	-	3 Year

3.3.4 National Fire Information Database

In the document, *Making Choices Today to Secure Tomorrow, Advancing the Official Community Plan*,¹⁹ it was recognized that to improve decision making, data driven decisions based on commonly understood priorities are necessary. For this reason, it is imperative that data on fire statistics be reviewed and contribute to the FMP as they can be used to support and enhance RFPS prevention and educational programs.

In September 2017, the Canadian Centre for Justice Statistics prepared a document for the Canadian Association of Fire Chiefs titled, “*Fire Statistics in*

¹⁹ Making Choices Today to Secure Tomorrow, Advancing the Official Community Plan, City of Regina, 2018, p.8

Canada, Selected Observations from the National Fire Information Database 2005 to 2014.” Seventy-four percent of the Canadian population was covered in this report which included seven participating jurisdictions: New Brunswick, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia, and the Canadian Armed Forces. It is important to have background information on the data collected from 2005-2014 for the National Fire Information database as Saskatchewan was a participating jurisdiction for the data collection and it can be surmised that due to the population of Regina, areas identified in the report are very much applicable to the Regina Fire and Protective Services.

The Canadian Centre for Justice Statistics (CCIS) is a division of Statistics Canada and worked with provincial contacts and Canadian Armed Forces staff to compile and analyze the data for the report. It is important to note that CCIS has significant experience and a long history of collecting and disseminating safety related data with policing, courts, correctional services, and other public safety agencies. The Canadian National Fire Information Data Base (NFID) serves to improve the analytical capacities for evidence-based research related to fire incidents, public safety and security that can be used by Fire Commissioners, Fire Marshals and Chief Fire Officers.

The data collected and analyzed for the 2005-2014 report only focuses on residential and commercial buildings, vehicles, and outdoor fires. In this capacity the data collected by the NFID will serve to help RFPS improve fire prevention, education, policy, and operational effectiveness. Some key components from the 2005-2014 report will be provided here as there is the opportunity for RFPS to look at the data and utilize it for its service delivery model.

A few highlights of Canadian fires according to the NFID report include but are not limited to:

- Consistent with the overall trend, the number of structural fires declined in Canada by 26% between 2005 and 2014.
- Of the 19,062 structural fires in Canada reported in 2014, three quarters (74%) were residential fires. Over the 10-year period, residential fires consistently accounted for 6 out of every 10 structural fires, ranging from 69% in 2005 and 2006 to 75% in 2013.
- Among structural residential fire incidents, cooking equipment and smoker's equipment/ open flame were the two leading sources of ignition in residential fires over the 2005 to 2014 period. From 1995-2011 the leading cause of fire related deaths in the City of Regina was smokers' materials

and from 2011-2018 the two leading causes of fire related deaths in the City of Regina were smokers' materials and cooking.

- Of the deaths occurring as a result of structural fires over the 2005 to 2014 period, the majority occurred as a result of fires in the home, ranging from 87% in 2009 to 95% in 2008 and 2010. Data from RFPS indicates that from 2011-2018, 91% of the fire deaths in the City of Regina were a result of a fire in a residential structure.

The evidence shows that residential fires have been declining. It is alarming, however, that the number of incidents where there was no smoke alarm in the residence had doubled over the ten-year period, from 1,183 in 2005 to 2,650 in 2014. Data collected by RFPS indicates that 82% of fire fatalities from 2011-2018 did not have a functioning smoke alarm. This coincides with the national data where the lack of a working smoke alarm continues to be a problem for the fire service and causes of fire related deaths in residential structures.

RFPS has been doing an admirable job at promoting the importance of working smoke alarms and should continue with these efforts.

3.3.5 Staffing Considerations

The NFPA 1035 (3.3.11) identifies fire and life safety education as a “comprehensive community fire and injury prevention program designed to eliminate or mitigate situations that endangers lives, health, property, or the environment.”

Based on recommendations by the FUS group, the Fire Prevention Officer per population ratio should be approximately one fire prevention officer per 15 to 20 thousand population. With a total complement of seven staff, and a present population of approximately 257,000, RFPS Fire Prevention Division should have the equivalent of 13-17 full-time employees (FTEs) within that Division. In comparison, the Saskatoon Fire Department has one fire prevention officer per 18,000 population and with a staffing level of 15 they fall within the FUS group staffing recommendation.

To assist with meeting this FTE requirement, RFPS have been utilizing their Suppression Division staff to support the Department's inspection program. To accomplish this in a manner that ensures knowledgeable inspections, it is recommended that all Captains should be qualified as Fire Inspector 1 and Fire and Life Safety Educator Level 1. EMT recognizes that training the Captains to Fire Inspector 1 will certainly assist in reaching benchmarks, however the

operational component of fire inspections can never be fully utilized due to station duties, emergency responses and training.

To assist the Department in identifying staffing requirements, NFPA 1730 includes a “Five-Step” staffing assessment guideline identified below.

Determination of Current Staffing Requirements

The present allotted time for the Fire Prevention Officers supports a proactive program to go above the minimum requirements of a fire prevention program. To assist fire departments in the determination of present and future staffing needs, NFPA 1730 outlines a process within Annex “C” of the standard. Ultimately, Council determines the level of Fire Prevention based off the local needs and circumstances of the community.

Note: Annex C is not part of the requirements of this NFPA document but is included for informational purposes only.

The five-step process involves a review of the following items:

1. Identifying the scope of desired services, duties, and desired outputs.
2. Review of the Fire Prevention Branch’s overall time demands in its efforts to offer services.
3. Review of hours presently documented, coupled with the hours required to meet annual goals of the branch.
4. Actual availability of branch personnel, factoring in vacation and other absences.
5. Estimating total number of personnel required based on the previous four steps.

Completing this process will assist the Department in further identifying what services it not only wants to offer, but what can actually be delivered based on present staffing levels. More information on this staffing equation can be found in Appendix “D” of this document and within the NFPA 1730 Standard.

To assist in this process, the Fire Marshal should ensure close tracking of the actual time spent on each of the fire prevention activities (ranging from site plan reviews, routine inspections, licensing, complaints, and requests, to name a few). Further, reporting should include clearly identifying the number of public education events as well as the number of adults and children reached. By identifying the time spent on each project and collating this into baseline (approximate) times, the Fire Marshal can then use those hours spent as a model figure in applying future initiatives.

Further to what has already been noted by the NFPA and the FUS, the CFAI outlines the following regarding fire prevention and public education:

“A public education program is in place and directed toward reducing specific risks in a manner consistent with the agency’s mission and as identified within the community risk assessment and standards of cover. The agency should conduct a thorough risk-analysis as part of activities in Category 2 to determine the need for specific public education programs.”

The utilization of existing resources is a cost-effective option for the promotion of fire prevention and public education programs. To accomplish this, some fire departments have trained most, if not all their fire officers (e.g. Captains and above) to be certified to conduct fire prevention/ public education inspections and programs. This not only brings more resources to the table but also enhances the level of fire safety awareness by those trained staff.

3.3.6 FUS Suggested Inspection Frequency Chart

Through the utilization of the FUS chart as a benchmark, the Prevention Division can continue to develop and improve upon their inspection program. This may better define what can be accomplished with its present staffing complement, along with presenting options for increasing inspection frequencies (through utilization of fire officers), and the determination of what is required to meet the FUS benchmarks.

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TABLE #5: FUS Inspection Frequency Chart

Occupancy Type	Benchmark
Assembly (A)	3 to 6 months
Institutional (B)	12 months
Single Family Dwellings (C)	12 months
Multi-Family Dwellings (C)	6 months
Hotel/Motel (C)	6 months
Mobile Homes & Trailers (C)	6 months
Seasonal/Rec. Dwellings (C)	6 months
Commercial (F)	12 months
Industrial (F)	3 to 6 months

It is acknowledged that the FUS suggested frequency chart can be difficult to address, therefore, priority should be focused on the vulnerable occupancies (e.g. nursing homes, retirement homes, group homes, etc.), institutional buildings, assemblies, multi-residential, and industrial buildings.

Given the size of an ever-growing city and a number of large inspectable properties the Prevention section is understaffed. Properties such as the University of Regina, RCMP Depot and the Regina Airport tax RFPS resources due to the sheer number of buildings, and the time it takes to adequately inspect them within the frequency required.

In order to successfully meet industry best practices in terms of fire inspections and meet the other demands placed upon the Prevention Division, it is recommended that RFPS hire additional fire inspectors/investigators within the next 5 years based upon the findings of a comprehensive work analysis of the existing job duties being performed by prevention staff.

3.4 Training and Education Division

A fire service is only capable of providing effective levels of protection to its community if it is properly trained and equipped to deliver these services. Firefighters must be prepared to apply a diverse and demanding set of skills to meet the needs of a modern fire service. Whether assigned to Administration, Fire Prevention, or Fire Suppression, firefighters must have the knowledge and skills necessary to provide reliable fire protection.

NFPA 1201, Standard for Providing Fire and Emergency Services to the Public notes, in relation to training and professional development, that:

- *4.11.1 The Fire Department Organization shall have training and education programs and policies to ensure that personnel are trained, and that competency is maintained in order to effectively, efficiently, and safely execute all responsibilities.*

The Deputy Chief and the Assistant Chief of Education & Training are aware of the program needs and facility requirements and have indicated that the Assistant Chief of Training is tracking much of this. To verify in a more official manner that each training program is meeting the related NFPA program recommendations, the Assistant Chief of Training should formally:

- Identify what training programs are required for the services that Regina Fire & Protective Services is providing.

- Each area needs to be evaluated regarding the present (and future) services to be provided by the Fire Service, such as suppression, EMS, hazardous materials response, technical rescue, etc.
- Identify the number of hours that are required to meet each of those training needs based on Provincial and/ or industry standards.
 - What are the recommended training hours required and what refresher programs need to be conducted, and when?
- Identify the resources required to accomplish this training.
- Identify what joint training can be accomplished with other departments to promote cost efficiencies (e.g. Saskatoon for specialty courses).
- Present an annual program outline at the start of each year to the Fire Chief, with measured goals and expectations reporting on the completion success rate at the end of each year.
- Continue to identify how the training facility can be better utilized as a form of revenue generation for the City.

The training program should include a training plan for all firefighters such as, but not limited to the follow programs:

- NFPA 1001 – Firefighter levels one and two within the first year
- NFPA 1002 – Driver operator qualifications within the second or third year
- NFPA 1006 – Technical rescue at the awareness levels
- NFPA 1021 – Fire Officer level one and two training for all suppression officers
- NFPA 1072 – Hazardous Materials response at the awareness level
- NFPA 1041 – Fire Instructor level one and two for those teaching courses within the department

3.4.1 Commission on Fire Accreditation International

The CFAI Program has a specific section that evaluates the training component of a fire department. In this section, the following points are noted:

- Category VIII: Training and Competency
 - *Training and educational resource programs express the philosophy of the organization they serve and are central to its mission. Learning resources should include a library; other collections of materials that support teaching and learning; instructional methodologies and technologies; support services; distribution and maintenance systems for equipment and materials; instructional information systems, such as computers and software, telecommunications; other audio-visual media, and facilities to utilize such equipment and services. If the agency does not have these resources available internally, external resources are*

identified, and the agency has a plan in place to ensure compliance with training and education requirements.

The RFPS has a Training Section that consists of an Assistant Chief of Education & Training, four Training Captains, one Workforce Development Coordinator and two Public Education Officers (PEO) that were added to the training division in 2019.

The training needs for RFPS are identified by the services provided and an analysis (needs assessment) of these services. The Department uses many processes to analyze services and to identify training needs including: strategic planning, corporate goals, legislative requirements, the standards of cover (SOC), risk analysis and critical task analysis.²⁰ The Regina Fire Bylaw No. 2018-49 identifies the purpose of RFPS in terms of fire suppression, emergency response services, rescue services and educational and training programs. It is through the needs assessment that RFPS can identify what they need to train and focus on. Training and education can be complex, and it is important to note that for a training division to be successful, it must focus on the training triad, which includes training, education, and experience.

Training is typically the skills and performance (hands on), while education is the knowledge or theory component, and experience is the learning throughout an individual's career gained through observation and experience. Consultation with the Assistant Chiefs and the Deputy Chief in charge of the Suppression and Rescue Divisions is done as the Training Division regularly conducts a needs assessment. The training goals and topics are moving away from the classroom setting to a more dynamic model based upon what operations requests.

The training division is mainly focused on operations staff with little focus on Fire Officers, Chief Officers or Fire Investigations. The training division creates training programs that follow the NFPA standards, International Fire Service Association Training (IFSTA), and International Association of Fire Chiefs (IAFC) standards. Competency is measured by the use of written and practical evolutions as well as the use of third-party agencies such as the Office of the Fire Commissioner.

3.4.2 Training Programs

In 2019 a Company Evolution drill was introduced that includes a level of crew training with evaluations on an undocumented, informal level. The technical rescue skills are regularly reviewed; however, a formal performance measurement tool

²⁰ Accreditation Report, July 5, 2017 prepared by the Commission on Fire Accreditation International for the Regina Fire and Protective Services

does not exist for the department and as such, some gaps may occur with the specialty (technical rescue) skills.

In 2017 the Accreditation document recommended that RFPS develop subject matter experts to support training programs delivered from the training division. Two of the Training Captains would be considered subject matter experts in specific disciplines such as EMS, NFPA 471, NFPA 1006, Blue Card Command and components of fire behavior such as flash-over training. The other two training captains are new to the division and continue to learn and develop their specific skills.

One of the issues that the training division has faced in the past is the long-term absence of staff. This poses problems and gaps in the delivery of course content if a training captain is considered a subject matter expert and is away for an extended period of time. The importance of having subject matter experts in the training division cannot be over emphasized, however, training should never rely on the expertise of one person for the delivery of specific subjects.

To continue its ongoing training efforts, it is recommended that the training division analyze and prioritize the skills and knowledge of the training captains and focus on a generalist approach where all training captains maintain a competency level in key subjects but maintain their skills as subject matter experts in specialized training topics.

In 2015 RFPS eliminated approximately 20 Platoon Trainers who were able to provide shift level training in their areas of expertise. This elimination has created a change in the workload of the existing Training Captains and minimized the ability to deliver advanced, new, or specific training that could have occurred if the base level delivery had been completed by the Platoon Trainers.

The Platoon Trainers were assigned on a regular shift rotation and able to deliver training components in evenings and weekends, whereas the Training Captains work a Monday-Friday schedule and are not able to deliver during shift rotations. It is not clear on the exact reason the Platoon Trainer positions were eliminated, however, the benefits of having them assigned a regular shift rotation and delivering fundamental training components are numerous and the gaps created by their elimination are evident.

Currently the Station Officers oversee the delivery or review of maintenance training. They are encouraged to provide feedback and identify competencies for skills maintenance, with the lesson plans being developed by the Training Section and assigned on a quarterly basis. A challenge for the delivery of training

programs by the Training Division and the completion of maintenance training overseen by the Station Officers is the competing priorities for operational staff during weekdays. RFPS is heavily involved in the delivery of public education and promotional programs and scheduling conflict can occur with operational staff.

Based on the shift training requirement, the implementation of the Platoon Trainers should be a priority within the next six months. RFPS management and IAFF Local 181 should strive to develop a memorandum of understanding regarding these positions and identify the exact roles, responsibilities, and expectations of these positions.

3.4.3 Training Partnerships

RFPS partners with the Office of the Fire Commissioner (Saskatchewan Public Safety Agency) in the certification of the following programs:

- NFPA 1002 Standard for Fire Apparatus Driver/Operator Professional Qualifications
- NFPA 1041 Standard for Fire Service Instructor Professional Qualifications, Level 1
- NFPA 1021 Standard for Fire Officer Professional Qualifications, Levels 1 & 2

RFPS also partners with the Manitoba Fire College, Justice Institute of British Columbia, and the Lakeland College to provide and certify training.

- NFPA 1041 Standard for Fire Service Instructor Professional Qualifications, Level 2 is typically delivered by the Saskatchewan Public Safety Agency.

RFPS provides a significant amount of technical rescue services that are based upon the NFPA 1006 *Standard for Technical Rescue Personnel Professional Qualifications* and includes:

- Rope
- Confined Space
- Trench
- Water Rescue (surface)
- Ice Rescue
- Dive recovery (As of 2021)

Typically, RFPS strives to have IFSAC certification for operational firefighting and officer skills and competencies, but it does not pursue IFSAC certification with the technical rescue skills. From a risk management perspective, technical rescue

skills are typically utilized during high risk/low frequency incidents where both the victim and firefighter's health and safety are at risk.

NFPA 1006 identifies the Job Performance Requirements (JPRs) for numerous technical rescue categories. To achieve the certification in the NFPA 1006 competencies RFPS can utilize a third party for training or seek out a partnership with one of their existing training partners. Due to the high risk/low frequency category of technical rescue, it is imperative that RFPS practice due diligence and implement a core set of competencies for technical rescue as identified in NFPA 1006.

In 2021, the RPS and RFPS transitioned the dive recovery duties to RFPS. NFPA 1006 identifies the JPRs required for Awareness, Operations and Technician level. As with most specialty and technical skills there is limited resources or certifying bodies in Saskatchewan so personnel were sent out of province for the appropriate training.

NFPA 1006 identifies the Awareness, Operations, and Technician levels where requisite skills and knowledge are required for each level to identify hazards, use equipment, and apply advanced techniques to perform technical rescue operations.

As noted earlier in the review of the Fire Bylaw, it is recommended that RFPS identify the applicable rescue categories that coincide with the Fire Bylaw and identify the Awareness, Operations and Technician performance requirements of such categories. The firefighters assigned to an existing rescue team must be the priority for RFPS. The cost of this certification is undetermined due to out of province travel and staff scheduling.

The responsibility of the officers on scene at a fire incident is to minimize the loss of life and property and to maximize safety for all responding firefighters. In a real incident, a rapid diagnosis of the situation is made during the speed of the events, stress, and through the receipt of hundreds of bits of information; to achieve a high level of situational awareness, officers need experience through training scenarios. The ability to make good decisions is based on Recognition Primed Decision (RPD) making where the officer makes a decision within seconds based upon past experience and the recognition of a problem and then selects a course of action to mitigate the incident. The downside of RPD is that if officers or firefighters are not exposed to real life training scenarios, the ability to pull from past experience may be diminished or flawed, which can result in poor decisions being made on the fireground.

Feedback from the internal survey identified the need for further hands-on training regarding different tactical evolutions for structural fires. Based upon the National Institute of Standards and Technology (NIST) study, it would be prudent for RFPS training division to further explore this. It is recommended that the Fire Training Division research, implement, and evaluate a training program where RFPS are trained in new and evolving structural firefighting tactics.

3.4.4 Training Division Challenges

The creation, implementation, evaluation, and scheduling of training can be a challenge for any training division and typically, the larger the department, the more challenges faced by the training division. Some challenges of RFPS training division include but are not limited to short and long-term illness creating gaps in scheduling and subject matter experts.

It is difficult to predict when or if a short-term or long-term illness will occur in the Training Division, but there may be an opportunity for mentoring to occur in the Training Division to prepare for when it occurs. The reintegration of the Platoon Trainers will provide a solid base for a secondment to the Training Division during a short or long-term absence. The cost projection for this type of secondment is undetermined as it is dependent upon the length of illness within the training division.

A short-term focus on the training needs and priorities of RFPS can be viewed as a reactive fix to a particular problem or training gap, which subsequently gives the perception of a reactive training division instead of a proactive one. The highly trained staff of RFPS respond to more than 5,000 service incidents annually including fire suppression, technical rescue, hazardous material incidents (hazmat) and emergency medical services. Due to the myriad of services offered by RFPS it is impossible to review core and advanced competencies every year; however, the analysis of core and advanced competencies need to be conducted so the Training Division can implement long-term and ongoing training programs where firefighter core competencies are regularly completed. RFPS should identify the high and low risk competencies required as a job function and determine a specific number of continuing education hours essential to maintain knowledge and skills proficiency.

Ongoing evaluations and performance measurement of firefighting and rescue skills is a necessity as all technical skills require a set of specific JPRs, knowledge and abilities. The maintenance and evaluation of these skills is imperative to reduce injury and risk during an incident. An inconsistent approach to prioritizing resources between Public Education, Training and Operational needs can cause

frustration with staff at times. This is not an uncommon problem within the Suppression Division and can be a result of operational staffing levels during each specific tour of duty. As such, it is recommended that RFPS management identify the priorities for operations staff and implement a monthly schedule where Public Education, Training and Operational needs are prioritized.

It was noted that there are some inconsistencies of operational skills being evaluated on the Platoons. This is where the implementation of the Platoon Trainers will help to minimize how skills are being evaluated along with developing subject matter experts within the Training Division to provide the framework for specific performance-based measurements. With the elimination of the Platoon Trainers, there is an increased expectation of the Training Captains to provide the services that were previously supported by the Platoon Trainers. The reintegration of the Platoon Trainers will not only close gaps on operational skills but will also allow the Training Captains to focus on the creation and delivery of programs and career planning within RFPS.

Career Planning

The prioritization of training topics and career planning must be a priority for RFPS. It is therefore recommended that RFPS create a Training Advisory Group with representatives from the Training Division, Fire Officers and IAFF Local 181. The terms of reference for the Training Advisory Group would be the focus of identifying the training priorities based upon a needs assessment of RFPS.

Historically, the focus has been on operations; however, the needs assessment must include fire inspectors, investigators, emergency management staff, dispatch, and chief officers. The Fire Inspectors and investigators require continuing education as their expertise is technical in nature and these members can be called to court as an expert witness.

There have been struggles to obtain furthering education for out-of-province travel. For example, two members have enrolled in a program with Laurentian University and have completed courses in their program, but they are required to attend an out-of-province practicum. Requests for the out-of-province practicum have been denied which means the two members that have worked diligently to complete courses will not achieve a successful pass in the program.

Most technical or specialty training programs are not available in the Province and when a case for out-of-province travel can be supported and justified, approval should be granted when budgetary funds are available. To support any required out-of-province training, RFPS management should provide a report to the

Executive Leadership Team emphasizing the importance of out-of-province training for technical and specialty training.

During interviews, EMT was advised that the training division is currently developing a Training Master Plan to define and address the challenges faced by RFPS training division. This plan should also include the topic of career planning into its Master Plan.

High Risk/Low Frequency Incidents

RFPS is responsible for numerous technical rescue categories and starting in 2021, became be the lead agency for dive rescue. The training division needs to develop a performance measurement tool for fire officers as the need for training, education, and experience in high risk/ low frequency incidents as it is critical in the development and confidence of the station officers.

Technology Consideration

- *Based on feedback received through the internal surveys, it was noted that the Training Division needs to place more focus on its program development and training goals as currently directed. Implementing a more formal evaluation of the training needs will assist in optimizing goal outcomes.*
- *To assist with the formal evaluation process, the utilization of an online feedback survey would also assist the Training Division with identifying the strengths of the programs, along with future areas for improvements.*

3.4.5 Succession Planning – Management

It only makes sense to prepare firefighters for future promotional opportunities and an agreement with IAFF Local 181 stipulates the requirements for promotion to Captain. When a vacancy occurs in management and the position is to be filled internally, this process is usually referred to as *succession planning*.

A career path identifying the knowledge, skills, and abilities for out of scope positions is necessary for any internal staff to improve their chances of a future promotion. There are three types of succession plans that should be considered for RFPS:

- *The Emergency Succession Plan:* This is not intended to be a permanent replacement and occurs when there is a sudden long-term illness or death of a Fire Chief or other Chief Officer. The Emergency Succession Plan is to be utilized as a short-term fix to fill the void during the absence of the Fire

Chief or any other Chief Officer. Those that are placed into these positions are in an acting capacity and need to have the knowledge, skills, and abilities to perform the job.

- *The Standard Succession Plan:* This is the most common succession plan that occurs when those in key positions leave for another job or quit the department without providing advance notice. The standard succession plan addresses the knowledge, skills, abilities, training, and education to prepare members of the fire department to advance in their career into a chief officer position.
- *The Anticipatory Succession Plan:* The intent is to have a smooth transition when the Fire Chief or other chief officer provides sufficient notice months in advance of their departure. This succession plan occurs when the department has been proactive in identifying the knowledge, skills and abilities required for each management position. It is a well thought out plan that takes years to prepare staff for future promotional opportunities.

Succession planning is not without its challenges as it can be challenging to ensure that members have an opportunity to develop a career path. A career development philosophy is a proactive way to keep staff motivated and productive where promotional opportunities can be limited. It was noted during the internal stakeholder survey that many members want to pursue opportunities to advance their careers into Chief Officer positions, but a career development program does not exist in RFPS. RFPS has numerous out of scope positions that include Assistant Chief, Fire Inspector, Fire Marshal and Manager of Emergency Preparedness & Business Continuity.

Ideally, RFPS should strive to groom talent from within its ranks and provide them the opportunities to develop their skills, education, and abilities so RFPS has a pool of talent to draw from. To accomplish this, RFPS needs to develop a career path so members can determine where they want to go in their career.

At the writing of RFPS FMP, the senior leadership team and the Citizen Services Division have made succession planning a priority and are utilizing a human resources consultant to facilitate the process. The focus is on all officer level suppression and rescue personnel which includes Lieutenants, Captains, and Senior Captains. RFPS needs to develop a career path for each out of scope position that identifies the knowledge, skills and abilities required for each. Further, the Citizen Services Division along with the human resources consultant should develop succession plans for prevention and education staff, Fire Marshal, and emergency management staff.

In *Chief Officer* (2014) it states, “Successful chief officers depend on their experience and their experiences to guide them. Their experience can be defined as the positions they have held while their experiences are the things they have done and situations to which they have been exposed. Experience and exposure are not the same thing. Seniority does not necessarily equate to experience.”²¹

Fire Officer III & IV Certification

The NFPA 1021 states that Fire Officer I-II are supervisory and managerial while Fire Officers III-IV are managerial and administrative in function. A review of the job descriptions for the Assistant Chiefs, Fire Marshal, Manager Emergency Preparedness & Business Continuity, Deputy Chief and the Director of Fire and Protective Services was conducted, and a list of the minimum core job responsibilities were identified. The education and experience required for each of those positions are not identified.

It was noted that the job description for Fire Inspector I-III had a list of education and experience for each respective position. Most noteworthy is that for Fire Inspector I, a minimum of six (6) years is required as an active Fire Fighter or Fire Protective Engineering diploma coupled with IFSAC certification NFPA 1031 Fire Inspector, NFPA 1033 Fire Investigator Level I and II, NFPA 1035 Fire & Life Educator, ICS 100 and other NFPA certificates. There is no further change in the components for Fire Inspector II and III other than a minimum of one (1) year served in the previous position before advancement can occur.

The NFPA 1021 Standard for Fire Officer Professional Qualifications identifies core competencies for Fire Officer III-IV. This standard is based upon progressive levels of performance from Fire Officer I-IV and each Authority Having Jurisdiction determines what is the best levels of education, skills, abilities, and knowledge required for an officer. Serious consideration must be given to the NFPA standards for officer requirements as RFPS strives to follow those standards in the operation and administration of the department.

Suggested Requirements for Assistant Chiefs

It is suggested that the Assistant Chiefs be required to have a minimum of Fire Officer III qualifications which include the following courses to be certified to the NFPA standard:

- Human Resource Management

²¹ Chief Officer, 3rd Edition (2014) International Fire Service Training Association, Fire Protection Publications, Oklahoma State University.

- Community Government Relations
- Inspection and Investigation
- Emergency Service Delivery
- Health and Safety
- Emergency Management
- Incident Command 400
- Information Officer
- Budget Management
- Leading People

Fire Department Safety Officer training that meets the NFPA 1521 *Standard for Fire Department Safety Officer Professional Qualifications* incident safety officer qualifications and Fire Ground Management should be provided to the Assistant Chief of Operations as the position assumes a senior command role at fires and emergency incidents.

Suggested Requirements for Deputy Chiefs

It is suggested that the Deputy Chiefs be required to have a minimum of Fire Officer IV qualifications or an applicable fire service-related post-secondary degree/diploma.

- Business Operations
- Leading People
- Community and Organizational Leadership
- Planning and Evaluation
- Leadership
- Communications
- Long range planning
- Risk management

Labour Relations

The importance of good labor relations in a career fire department cannot be overemphasized. Labour relations has a significant role in career fire departments and RFPS is no exception in that grievance settlements, arbitrations and past practices shape the foundation of the labour relations in the department. When there is a clear understanding of the roles that management and the union have, the working relationship can be rewarding and a positive experience. Having formal training in labour relations is well worth the time and investment for any chief officer. This training should be provided to the Assistant Chiefs, Deputy Chiefs, and the Director of Fire & Protective Services.

Director of Fire & Protective Services

The fire service is a profession and bachelor's degrees and even master's degrees are becoming more commonplace for those in the Director of Fire & Protective Services/Fire Chief position. At a minimum it is suggested that the Fire Chief have a degree in business or a fire related degree.

3.4.6 Fire Investigations

The responsibilities of the seven fire inspectors are concentrated on fire prevention; inspections of various occupancy classifications; code enforcement and prosecution for fire code and municipal fire bylaw infractions; fire investigations to determine origin and cause; and building plan reviews.

Training is required for fire inspectors to maintain their skills and be deemed an expert witness in court. The continuing education component is critical for fire investigators as they must remain competent in numerous skills required in NFPA 1033 Standard for Professional Qualifications for Fire Investigator. Examples of the necessary skills from NFPA 1022 includes but are not limited to:

- Fire Analysis - the process to determine the origin, cause, and development or failure analysis of a fire or explosion.
- Fire Dynamics - the study of how chemistry, fire science and the mechanisms of heat transfer to influence fire behaviour.
- Fire Investigation Technology - the applied technology related to the specialized knowledge and skills in documentation of the investigation, scene and evidence processing, failure analysis and analytical tools.
- Fire Science - the knowledge and study of fire and related subjects such as combustion, flame, heat release, heat transfer, fire and explosion dynamics, thermodynamics, kinetics and their interaction with people, structures, and the environment.

Although RFPS fire investigators have this training, it is critical for them to maintain competency and continuing education in their field. When testifying in court, fire inspectors should be able to demonstrate their participation in a continuing education program that keeps them current in their field of expertise. It is not uncommon for people employed with specialty skills to meet a minimum standard of continuing education every year or two.

3.5 Suppression Division

The Suppression Division is comprised of four platoons working out of seven fire stations, 24 hours a day, 7 days a week. To make an informed decision on staffing

requirements for the Suppression Division, consideration is dependent on the following points:

- Does the Regina Fire & Protective Services have an approved response criterion as a baseline?
 - Has Council given direction to the Fire Chief regarding expected response times that are to be met by the Fire Department?
 - If so, is the Department meeting this response criterion on a consistent basis or is it struggling to meet the response times and perhaps falling behind?
- What change in population, demographics, and industry is occurring that may precipitate the need for a modification in stations and staffing?

There are four main standards and industry best practices that need to be considered:

- There are industry standards/best practices in the form of the NFPA's 1710 and 1730 standards, which offer guidance regarding response times, staffing, fire prevention, and code enforcement.
- The FUS, which is endorsed by the insurance industry as a tool for measuring the ability of a fire service in meeting the response time, staffing, and water supply needs of a community.
- The CFAI, a program that has a fire service complete three key documents, including:
 1. A community risk assessment and standards of cover document
 2. A self-assessment manual based on the 10 categories that make up the program review
 3. A strategic plan for the service(The FMP can be considered the strategic plan for the service.)

3.5.1 NFPA 1710 – Career Fire Departments

To accomplish the NFPA Standard, a fire department should endeavour to meet the stated minimum response standards based on responding to a 2,000 ft² single-family dwelling. The dwelling (noted in the Standard) does not have a basement or other exposures (buildings close enough to each other to create a greater possibility for fire spread); however, most homes in Regina have basements and are often built close enough to each other to create that “exposure” for potential fire spread, which must be considered by the Fire Department in its response efforts.

Based on a review of the response data supplied, along with discussions with the Fire Chief, Regina Fire & Protective Services is witnessing a varying level of

success in meeting the NFPA response criteria based on the location of the call. Calls in the more rural or industrial areas of the city have longer drive times. This can be seen in the charts found in *Section 4 – Community Response*. By utilizing this information in conjunction with the supplied response maps created by Emergency Management & Training Inc., we can see the effect of road networks, traffic levels, and traffic control systems on response times by emergency responders.

More detailed information can be found in Section 4 that focuses on the Suppression Division, along with goals and expectations in meeting industry standards.

3.5.2 Modern Structural Fires

The Underwriter's Laboratory (UL) Firefighter Safety Research Institute (FSRI) develops practical fire service education based upon research to help firefighters stay safe while performing their suppression duties. The UL FSRI conducts and disseminates research and training programs that focus on the changing dynamics of residential, commercial, and industrial fires and the impact it has on the strategies and tactics for the fire service.²²

In 2005 the UL FSRI conducted an experiment to gather data on the difference of modern and legacy furnishings in a living room fire. The modern and legacy rooms were filled with furnishings commonly found in their day and both were lit with a candle on the right side of the sofa. The modern room transitioned to flashover in 3 minutes and 30 seconds while the legacy room transitioned to flashover at 29 minutes and 30 seconds.²³

Research and studies continue to confirm that today's residential fires burn hotter and faster due to the modern furnishings and synthetic materials. This poses significant challenges for arriving firefighters as suppression and rescue times are significantly decreased. The importance of a quick initial response and adequately staffed suppression crews cannot be stressed enough, as today's residential fires involving modern construction pose significant challenges and risks for today's fire service.

²² UL Firefighter Safety Research Institute <https://ulfirefightersafety.org/about-us.html>

²³ Comparison of Modern and Legacy Home Furnishings <https://ulfirefightersafety.org/research-projects/comparison-of-modern-and-legacy-home-furnishings.html>

The fire service has recognized this, but the general public may not be aware of the decreased time they have to exit a residential structure fire. The hazards to firefighters have increased due to the hotter and faster fires from modern furnishings and synthetic materials along with the changes in residential building construction.

A study by NIST recognized that strategies and tactics need to change when fighting today's modern residential structure fire. The trial study confirmed that an effective strategy today was the placement of water directly on the blaze instead of ventilating the building and can make conditions safer and help firefighters extinguish the fire faster. What this evidence is showing is that the fire service must continually adapt its strategy and tactics as residential construction has significantly changed in the last 20 years. The NIST recognized that there is not a "one tactic" solution for every residential fire scenario and firefighters will need to choose from interior or transitional attack depending upon the situation. The ability to choose and change tactics is determined by the level of training of the officers and firefighters that arrive on scene.

It is recommended that the Fire Training Division research, implement and evaluate a training program where RFPS personnel are trained in new and evolving structural firefighting tactics.

3.6 Health and Wellness

Health and wellness of staff is a key focus for all municipalities and RFPS is no exception. During the review by EMT, it was noted that all the stations have been equipped with workout facilities to ensure that staff can keep fit, which helps to reduce work related injuries. Along with this fitness equipment, each station is equipped with diesel exhaust systems to reduce exposure to vehicle exhaust. Diesel exhaust has been contributed to health-related issues when people are exposed to it over long duration. By having these systems in each station, the health concern is greatly reduced.

Over the years the quality of the firefighters' gear has improved and continues to meet all recommended standards, along with being tested on a regular basis. This ensures that RFPS staff are properly equipped and protected from most environments and related exposures that they may meet during the execution of their duties.

From a mental health perspective, the Department has "Peer Mentors" on staff to assist any of the members who may be dealing with personal and/or emotional challenges. This program helps to identify and address issues before they become

critical in nature. If there is a need to move a situation to a higher level, the Department has a program in place with a local health services group that offers confidential counselling to the members of RFPS.

RFPS also has a parental leave program for parents of newborn and/or adopted child. This allows the parents the opportunity to be at home with their new family members for an extended period.

All the previously noted initiatives have helped to promote a more supportive environment for all the staff at RFPS. As such, the City's management, senior fire management and the Regina Firefighters Association IAFF Local 181 are to be commended for their ongoing efforts in ensuring the health and safety of the staff.

3.7 Salary Compression

Salary compression can be defined as the salary of a lower ranking Officer or Firefighter being paid almost as much as their colleagues in higher ranking positions. Two of the identified issues from the internal survey was that of wage compression between the out of scope officers and in-scope members of Local 181 and the desire to have out of scope promotions to come from within the rank and file of RFPS. During the consultation process and noted in the survey, members of the RFPS are interested in advancing their careers through succession planning and being compensated appropriately for the promotion to an out of scope position. However, the salary compression currently within RFPS officer ranks discourages internal candidates from seeking an out of scope promotional opportunity. For example, a 2nd year Captain earns \$132,239 before overtime and statutory holiday pay whereas an Assistant Chief of Operations makes \$133,393 for much more responsibility. Once overtime and statutory holiday pay, the Captain is making more than the Assistant Chief of Operations whom they report to. This leads to Captains not applying for more senior positions as their take home salary would decrease.

This issue of salary compression must be taken seriously as it is negatively impacting succession planning as well as recruitment and retention for out of scope positions within RFPS. It is generally understood that cities want to keep their best people and those that add value to the corporation and salary compression is a detriment to promoting from within RFPS. When salary compression exists, there is a demoralizing effect and during the consultation process there were indications of existing disappointment with the salary compression.

SECTION 4: Community Response

4.1 Fire Suppression/Emergency Response

There are 256 full-time Fire Suppression personnel within the RFPS. The Suppression Division is comprised of four platoons working out of seven fire stations, 24-hours a day, 365 days a year. There is a total of 64 firefighters per platoon with a minimum staffing level of 47 per platoon.

4.1.1 NFPA (1710)

The purpose of NFPA 1710 1.2.1 states, “The purpose of this standard is to specify the minimum criteria addressing the effectiveness and efficiency of the career public fire suppression operations, emergency medical service, and special operations delivery in protecting the citizens of the jurisdiction and the occupational safety and health of fire department employees”.

Fire Suppression Operating Units

RFPS utilizes Engine, Ladder and Quint Companies and mobile water supply Tankers. The NFPA 1710 (5.2.3) defines operating units as fire company staffing requirements shall be based on minimum levels necessary for safe, effective, and efficient operations.

An **Engine Company's** primary function is to pump and deliver water and perform basic firefighting at fires and search and rescue functions. NFPA 1710 recommends a minimum of four on-duty members. In a first due response zone with a high number of incidents, geographical restrictions, geographical isolation, or urban areas as identified by the AHJ, an Engine Company shall be staffed with a minimum of five on-duty members. Further to this, NFPA 1710 states that a first due Engine Company with tactical hazards, high-hazard occupancies, or dense urban areas, as identified by the AHJ, these companies shall be staffed with a minimum of six on-duty members.

A **Ladder Company's** primary function is to perform the variety of services such as forcible entry, ventilation, search and rescue, aerial operations for water delivery and rescue, utility control, illumination and overhaul and salvage work. A Ladder Company shall be staffed with a minimum of four on-duty members. In a first due response zone with a high number of incidents, geographical restrictions, geographical isolation, or urban areas as identified by the AHJ, the Ladder Company shall be staffed with a minimum of five on-duty members. In first due response zones with tactical hazards, high-hazard occupancies, or dense urban

areas, as identified by the AHJ, a Ladder Company shall be staffed with a minimum of six on-duty members.

A **Mobile Water Supply Tanker** is an apparatus whose primary function is to pick up, transport, and deliver water to the scene of a fire or other incident that requires a dedicated water source. A tanker shall be staffed with a minimum of two on-duty members.

NFPA 1710 identifies other types of companies that are utilizing specialized equipment and apparatus shall be provided to assist Engine and Ladder companies as per the fire departments standard operating procedures. These companies shall be staffed with the minimum number of members to deal with the tactical hazards, high-hazard occupancies, high incident frequencies, geographical restrictions and other pertinent factors identified by the AHJ.

A **First Due Response Zone** is defined by NFPA 1710 (3.3.28) as the geographic area surrounding a fire station in which a company from that station is projected to be the first to arrive on the scene of an incident.

Geographic Isolation as defined by NFPA 1710 (3.3.32) is a first due response zone or jurisdiction with staffed resources where over 80 percent of the response area is outside of a 10-minute travel time from the next closest staffed suppression apparatus.

Geographic Restriction is defined by NFPA 1710 (3.3.33) as a defined condition, measure or infrastructure design that limits response and/or results in predictable response delays to certain portions of the jurisdiction.

The 2020 edition of NFPA 1710 The Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments identifies the minimum requirements relating to the deployment and organization of fire suppression services, emergency medical operations, and special operations to the public by the career fire department.

The following are excerpts from the NFPA standard for certain situations:

Single-Family Dwelling - Initial Full Alarm Response

The NFPA 1710 standard defines the initial full alarm assignment to a single-family dwelling as a 2,000 ft² (186 m²) two-storey single-family dwelling without a basement and with no exposures present. The minimum staffing levels recommended for the initial response is 16 firefighters plus an Incident Commander, and 17 if an aerial device is required to respond. The NFPA 1710 standard identifies that the first arriving engine company should arrive on scene in 240 seconds/4 minutes (travel time) and 360 seconds/6 minutes (travel time) or less for the initial full assignment for 90% of these incidents.

Open-Air Strip Shopping Centre - Initial Full Alarm Response

The NFPA 1710 standard defines an initial full alarm assignment to an open-air strip shopping centre ranging from 13,000 ft² to 196,000 ft² (1203 m² to 18,209 m²) in size and requiring a minimum of 25 firefighters plus 2 commanders dedicated to managing the incident, and 26 firefighters if an aerial device is required. The NFPA 1710 standard identifies that a full initial alarm should arrive on scene in 480 seconds/8 minutes (travel time) or less to 90% of these incidents.

Apartment - Initial Full Alarm Response

The NFPA 1710 standard defines an initial full alarm assignment to a structure fire in an apartment as a 1,200 ft² (111 m²) apartment within a three-storey, garden-style apartment building requiring a minimum of 27 firefighters including 2 commanders dedicated to managing the incident, and 28 if an aerial device is required to respond. Due to the multiple storeys involved, it is expected at least one or two aerial devices will be responding to this type of incident. The NFPA 1710 standard identifies that a full initial alarm should arrive on scene in 480 seconds/8 minutes (travel time) or less to 90% of these incidents.

High-Rise - Initial Full Alarm Response

The NFPA 1710 standard defines a high-rise as a building with the highest floor greater than 75 ft (23 m) above the lowest level of fire department vehicle access. The initial full alarm assignment to a high-rise structure fire shall be a minimum of 42 firefighters (43 if the building is equipped with a fire pump) including 2 commanders establishing a stationary command post outside the hazard area for overall coordination and direction of the initial full alarm assignment conducted in compliance with the incident command system. The NFPA 1710 standard identifies

that a full initial alarm should arrive on scene in 610 seconds/10 minutes 10 seconds (travel time) or less to 90% of these incidents.

RFPS has a Standard Operating Procedure (SOP) for high-rise response. Due to the complexity of working fires in a high-rise, it is recommended that the High-Rise Response SOP 202-09 be reviewed to ensure that the functions identified in SOP coincide with functions identified in NFPA 1710.

To provide a fire department clearer focus on what the ultimate goals for emergency response criteria are, the NFPA suggests that response times should be used as a primary performance measure by fire departments. The NFPA's 1710 Standard for career fire department response times is noted herein.

The NFPA standards measures with a percentile ranking, which is the percentage of responses that meet the target timeframe. For a fire suppression incident, the 90th percentile response time is the time that the department meets 90 out of 100 responses and should be reached in four minutes travel time or less, with the second company arriving with a minimum staffing of 4 personnel in six minutes or less travel time and for other than a high-rise a full alarm assignment arriving in 8 minutes or less. For a high-rise, 6 minutes, 10 seconds or less travel time the deployment of an initial alarm assignment at a suppression incident.

In relation to response times, section 4.1.2.3. alarm handling identifies that the fire department shall establish the following objectives:

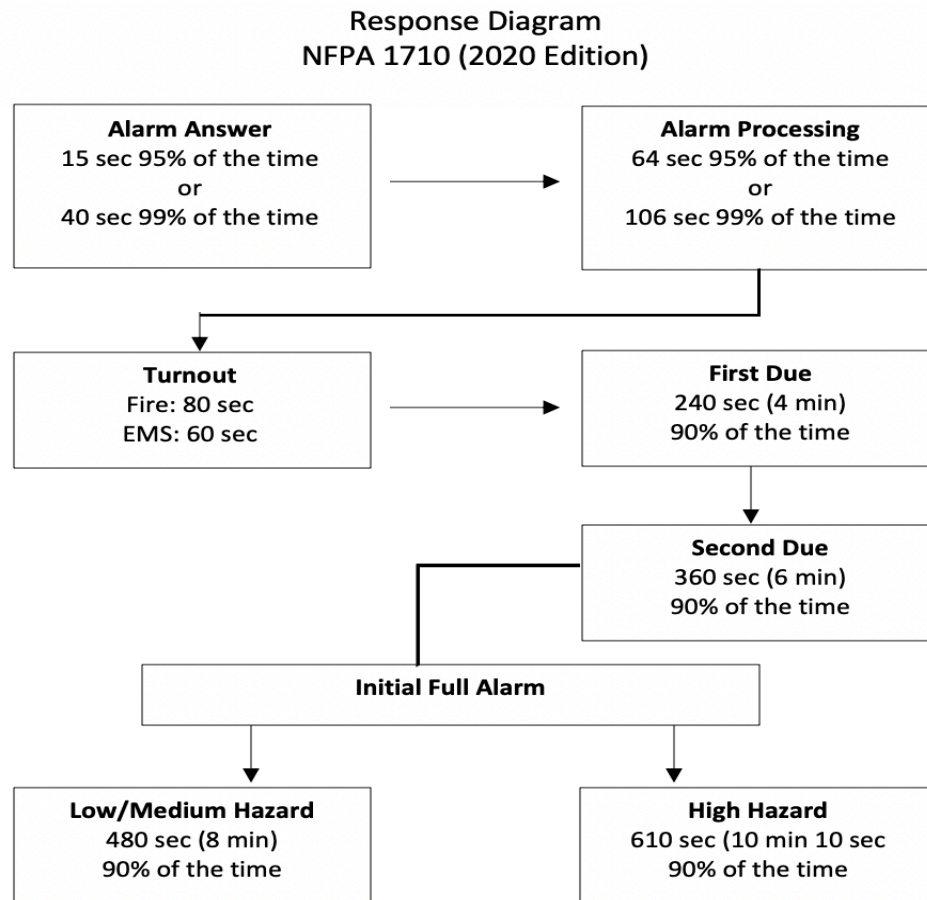
- When an alarm is received at a public safety answering point (PSAP) and transferred to a secondary answering point or communications centre, the agency responsible for the PSAP shall establish a performance objective of having an alarm transfer time of not more than 30 seconds for at least 95 percent of all alarms processed as specified by NFPA 1221.
- The fire department shall establish a performance objective of having an alarm processing time of not more than 64 seconds for at least 90 percent of the alarms and not more than 106 seconds for at least 95 percent of the alarms as specified by NFPA 1221.

NFPA 1710 (4.1.2.1) states that the fire department shall establish the following performance objectives for the first due-response zones that are identified by the AHJ.

- 80 seconds for turnout time for fire and special operations response and 60 seconds turnout time for EMS response
- 240 seconds (4 minutes) or less travel time for the arrival of the first arriving engine company at a fire suppression incident.

-
- 360 seconds (6 minutes) or less travel time for the arrive of the second company with a minimum staffing of 4 personnel at a fire suppression incident.
 - For other than high-rise, 480 seconds (8 minutes) or less travel time for the deployment of an initial full alarm assignment at a fire suppression incident.
 - For high-rise, 610 seconds (10 minutes) or less travel time for the deployment of an initial full alarm assignment at a fire suppression incident.
 - 240 seconds (4 minutes) or less travel time for the arrival of a unit with first responder with automatic external defibrillator (AED) or higher-level capability at an emergency medical incident.
 - 480 seconds or less travel time for the arrival of an advance life support (ALS) unit at an emergency medical incident, where this service is provided by the fire department provided a first responder with an AED or basic life support (BLS) unit arrives in 240 seconds or less travel time.

FIGURE #7: NFPA 1710 Response time Diagram



When considering the response times and related needs for a community, *FIGURE #5 – Time Vs. Products of Combustion* presents the reader with a general understanding of how quickly a fire can grow within a furnished residential structure over a short period of time. Depending on many factors, the rate of growth can be affected in several ways, increasing or suppressing the burn rate through fire control measures within the structure.

When we look at the response time of a fire department, it is a function of various factors including, but not limited to:

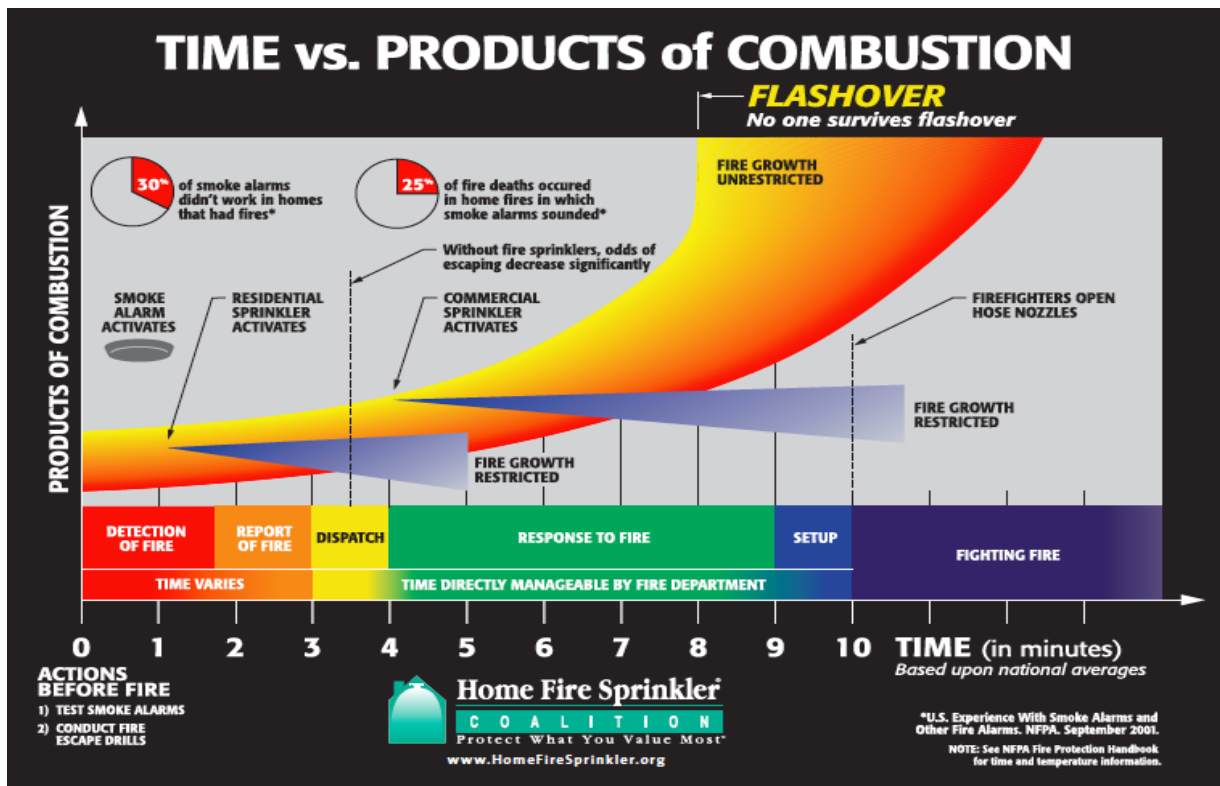
- The distance between the fire department and response/incident location
- The layout of the community
- Impediments such as weather, construction, traffic jams, lack of direct routes (rural roads)
- Notification time
- Turnout time (time from notification to leaving the station)

-
- Assembly time of the firefighters, both at the fire station and at the scene of the incident

The criticalness of immediate initiation of fire suppression activities is illustrated in the Fire Response Curve. The curve within the chart notes the following time variables:

- Detection of fire – when the occupant discovers that there is a fire. The fire may be in a very early stage or could have been burning for quite some time before being detected.
- Report of fire – when someone has identified the fire and is calling 9-1-1 for help.
- Dispatch – the time it takes the dispatcher to receive the information and dispatch the appropriate resources.
- Response to the fire – response time is a combination of the following:
 - Setup time – the time it takes for the fire crews to get ready to fight the fire.
 - Fighting the fire – actual time on scene extinguishing the fire.

FIGURE #8: Time vs. Products of Combustion



Note: Figure #8, obtained from the Home Fire Sprinkler Coalition, identifies when a residential fire activates and prevents fire growth and flashover.

Based on fire growth, as demonstrated in Figure #8 and the previously noted associated timelines, the overall goal of any fire department is to arrive at the scene of the fire and/ or incident as quickly and as effectively as possible. If a fire truck arrives on scene in eight minutes or less after the initial detection of the fire, with a recommended crew of four or more firefighters, there is increased opportunity to contain the fire by reducing further spread to the rest of the structure. Alternatively, if the first fire attack team arrives with fewer than four firefighters on board, it is limited to what operations it can successfully attempt.

Based on studies and evaluations conducted by the NIST and the NFPA, no interior attack is to be made by the firefighters until enough personnel arrive on scene. The expectation is that a minimum of three firefighters and one officer arrive on scene to make up the initial fire suppression team. This team of four can effectively do an assessment of the scene, secure a water source (fire hydrant), ensure the fire truck is ready to receive the water and get the fire pump in gear, as well as unload and advance the fire hose in preparation for entry into the structure. A team of four allows for adherence to the recommended “two-in, two-out” rule,

referring to the presence of two firefighters inside the structure with two outside ready to go in as back-up.

Not having enough firefighters at an emergency scene can create an unsafe situation for fire personnel. It can also cause a delay in conducting fire suppression, lifesaving, and/or rescue operations. The NFPA 1710 standard on firefighting notes that for a typical two-storey, single-family dwelling (without a basement), the required response of 16 (17 if an aerial device is used) firefighters on scene is necessary to effectively battle the fire. RFPS meets these staffing requirements on a consistent basis.

It must also be noted that RFPS responds to more than just fires. For example, motor vehicle collisions can create a medical or fire emergency that also needs to be addressed urgently. It is therefore necessary for all calls for assistance to be answered as efficiently and effectively as possible.

To be effective, a fire department should strive to provide an adequate, effective, and efficient fire suppression program designed to control/extinguish fires for the purpose of protecting people from injury, death or property loss. To accomplish this, the staff at RFPS need to ask:

- Does the fire department have a comprehensive training program and evaluation system for all positions?
- Does the fire department have a system to ensure that an adequate number of trained personnel respond to all emergencies within a reasonable time period?
- Is the fire department provided with adequate resources to safely and effectively handle the risks it will be called upon to mitigate?
- Does the fire department use SOPs to define expected fire department actions for the wide variety of situations it might encounter?
- Does the fire department have automatic response agreements to guarantee an adequate level of personnel at all times?

The Department should review these questions annually to confirm if it has and continues to implement effective measures to meet community and Department needs.

4.1.2 Residential Sprinkler System

Sprinklers reduce the risk of serious injury to both civilians and firefighters. Sprinklers can control a fire before the fire department arrives. Fires controlled by sprinklers are more likely to be confined to the room of origin than fires in

properties without sprinklers. Working smoke alarms provide an essential early warning yet they cannot control the fires; sprinklers can and do.²⁴

A residential sprinkler will activate prior to a fire growing into flashover conditions. Flashover occurs when the entire room and its contents ignite resulting in a fully involved room and contents fire with untenable hot gases and fire from floor to ceiling. These conditions are not survivable, and the research indicated that where a fire is present, it can become untenable within a few minutes after a smoke alarm is activated. Residential systems are one part of a total system of safety where smoke alarms (early detection) plus early suppression (sprinkler system) and a quick evacuation (practiced drills) reduce fatalities and harm to the public.

The National Fire Incident Database indicated that through a 10-year period, most jurisdictions indicated a large number of unknowns regarding residential sprinkler systems. The available data indicated that in the majority (95%) of the fire related incidents in 2014, there was either no sprinkler system in place where a death occurred, or it was unknown as to whether there was a sprinkler system present.



Sidewall Sprinkler

Concealed Sprinkler

Pendent Sprinkler

Photo from Home Fire Sprinkler Coalition

A 2017 NFPA fact sheet titled, *Sprinklers in Reported U.S. Fires during 2010 to 2014*, reported that the civilian fire rate of 0.8 per 1,000 reported fires was 87% lower in properties with sprinklers than in properties with no automatic extinguishing system. It further identified that the average firefighter fireground injury rate of 20 per 1,000 reported fires was 67% lower where sprinklers were present.

In October 2017, a study titled, *Sprinkler Systems and Residential Structure Fires; Revisited: Exploring the Impact of Sprinklers for Life Safety and Fire Spread* was published by the University of the Fraser Valley. The study analyzed data from 439,256 fire incidents in Canada and found that 97% of the fires occurring in residential buildings without sprinkler protection resulted in 99.2% of the fire deaths. Less than 1% of fires in a single detached residential property occurred in the presence of sprinkler protection. Based upon the 10-year period, it was

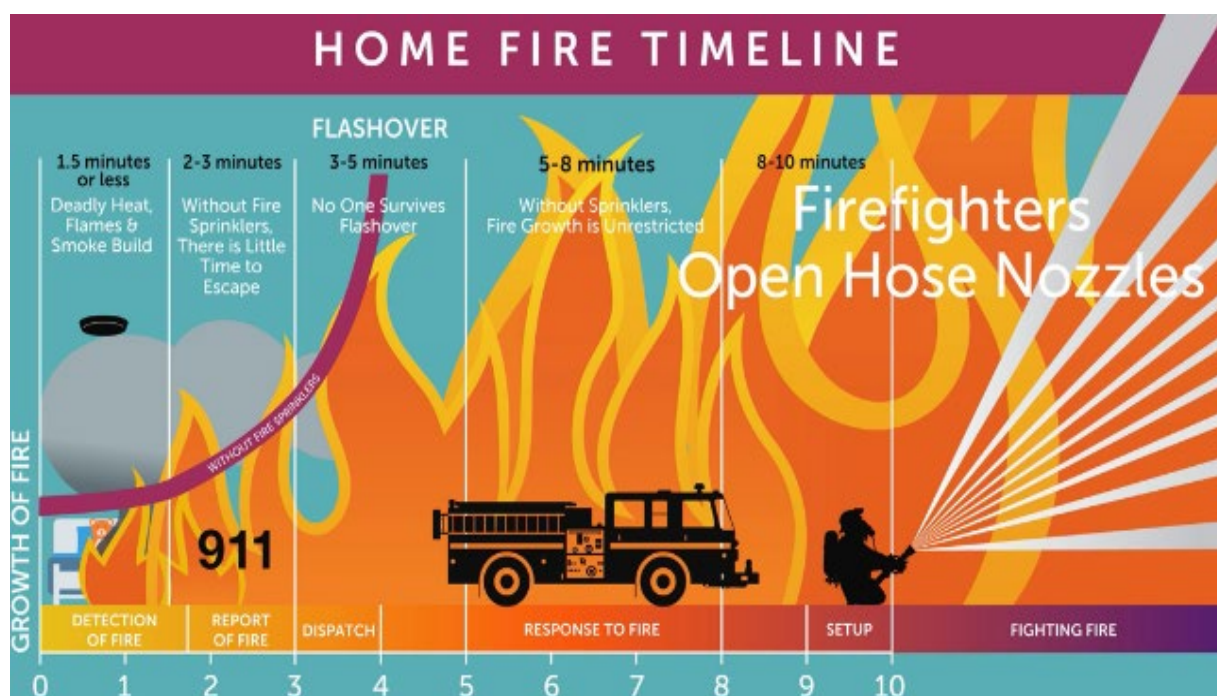
²⁴ Sprinkler Systems and Residential Structural Fires-Revisited: Exploring the Impact of Sprinklers for Life Safety and Fire Spread, Revised February 2018. University of the Fraser Valley, School of Criminology & Criminal Justice.

identified that in the absence of fire sprinkler protection, the death rate per 1,000 more than tripled that of sprinklered homes. The serious injury rate per 1,000 was double that of non-sprinklered homes versus sprinklered.

United States Residential Sprinkler Cases

Due to the lack of Canadian community studies regarding residential sprinklers, EMT is providing a summary of three community studies from the U.S. in Appendix F.

FIGURE #9: Home Fire Timeline



25

Environmentally Friendly

In 2009 the Home Fire Sprinkler Coalition (HFSC) partnered with FM Global, one of the world's largest commercial property insurers, to identify, analyze and evaluate the environmental impact caused by home fires—a topic of increasing international importance. FM Global conducted full-scale tests to identify the environmental impact of sprinklered and non-sprinklered home fires. The testing identified the positive environmental impacts of sprinkler systems and showed:

- Greenhouse gas emissions were cut by 97.8%
- Water usage was reduced between 50% and 91%
- Fewer persistent pollutants, such as heavy metals, were found in sprinkler wastewater versus fire hose water.
- The high pH level and pollutant load of non-sprinkler wastewater are an environmental concern.

Residential sprinkler systems can reduce the amount of water run-off and pollution, reduce fire damage by up to 71%, and reduce the amount of water used to fight a residential fire by as much as 91%. ²⁶

²⁵ Home Fire Sprinkler Coalition

²⁶ Ontario Association of Fire Chiefs

As part of the RFP deliverables for RFPS FMP, EMT considers it economical to use technology to protect the health and safety of firefighters and reduce workplace injuries and it is equally economical and proactive to use fire suppression technology such as residential sprinkler systems to reduce the impact of fire in the community. Residential sprinklers are part of a community's risk reduction program as fire and its impact to the community and people can be proactively addressed while minimizing the long-term economic impact in terms of injuries, deaths, lost wages, property damage, firefighter injuries and environmental impact.

Residential Sprinkler Options

There are some misconceptions of residential sprinkler systems regarding activation of a sprinkler head and cost for new construction. An educational process is required for the public and construction industry on the many benefits of having a residential sprinkler system.

Research indicated that the installation of residential sprinklers increases new construction by 1-1.5 percent of the total cost of new construction, but a 2013 report commissioned for the Regina & Region Home Builders' Association which includes Community Developers, Home Builders, Trade Contractors, Renovators, Service & Supply Companies, and other professionals identified that the actual cost significantly exceeds the 1.5 percent and that the cost of a residential sprinkler system can range from \$15,000-\$20,000 per home.

The Home Fire Sprinkler Cost Assessment (2013) report by the Newport Partners and The Fire Protection Research Foundation conducted a study to update the information attained in the *Home Fire Sprinkler Cost Assessment 2008 report*. All but one of the 17 communities studied were from the United States with Pitt Meadows, B.C. being the only Canadian city.

Pitt Meadows, B.C. has mandated residential sprinklers as per NFPA 13D standards since 1998. The Pitt Meadows homes used in the study had a residential sprinkler system supplied by a public water source with CPVC piping material. While there is an additional cost, residential sprinklers are an available fire protection technology that has a proven track record of saving lives.

"If municipalities view sprinklers to be part of their goal in protecting citizens and their properties, then they need to find ways to reduce fees, eliminate redundancies in the approvals process, and identify efficiencies that - at the end of the day - make the cost of a sprinkler system negligible for builders," says Peter Simpson, former CEO of the Greater Vancouver Home Builders Association and

now a firefighter with the Dayspring and District Fire Department in Nova Scotia. *“Builders also need to understand that the Fire Service is not their enemy. We are just out there to help protect the families who buy their houses.”*²⁷

A residential sprinkler system does not replace the need for effective fire department staffing and a quick response time; rather, it is a proactive way to reduce fire related deaths, property damage and environmental impact. The issue here is not whether residential sprinklers save lives, because evidence demonstrates they do, but how to work collaboratively with community stakeholders and the Regina & Region Home Builders Association to educate homeowners on the life-saving benefits of residential sprinklers.

Based on the information noted, it is recommended that RFPS partner with key stakeholders such as the Regina & Region Home Builders Association to:

- 1) Educate homeowners on the benefits of a residential sprinkler system as the city boundaries grow and exceed reasonable response times.
- 2) Homebuilders can offer residential sprinklers as an option in their home designs and the customer can decide whether they want to proceed.

In communities where RFPS has an automatic fire service agreement, the installation of residential sprinklers should be promoted in new residential construction.

4.1.3 High Intensity Residential Fires

In 2007 a fire in a condominium complex construction in Edmonton destroyed 18 homes and damaged 76 others. A multi-house fire destroyed three homes in Saskatoon in 2018 with 2 of the homes being under construction at the time.

The Government of Alberta created the *High-Intensity Residential Fires*, a campaign working to review the factors surrounding high-intensity residential fires in the Province. In 2007 the final report and recommendations were provided for the Minister of Municipal Affairs and Housing on ways to reduce the occurrence and severity of High Intensity Residential Fires in the future. A High Intensity Residential Fire (HIRF) is defined as a fire involving rapid heat release and fire spread beyond the point of origin that usually involves adjacent buildings and the early exposure of large amounts of combustible materials. The HIRFs can occur in

²⁷ The Canadian Fire Chief Magazine, (Spring Edition 2019) No Home Unsprinklered: Myth busting and Team-building, p. 18

occupied residential buildings, unoccupied residential buildings that are under construction, and a mix of occupied and under construction residential buildings.²⁸

The intent of the requirements for HIRF are to provide more fire protection during the building construction that is outside of a 10-minute response time by the fire department. The requirements for HIRF are intended to prevent the spread of fire and property damage and to give the fire department a few extra minutes to arrive and suppress the fire. Part of the HIRF requirements include non-combustible siding, exterior gypsum board, no side-yard windows or the use of residential sprinkler systems.

The HIRF building regulations in Alberta are not intended to minimize the need for a quick-fire department response time, but as the City of Regina grows consideration of these building standards should be given to explore the introduction of fire-resistant construction materials in areas with extended response times. Understanding how quickly a fire can reach flashover is important in assessing the response capacity of RFPS. Extended response times increase the probability of flashover occurring before the first arriving engine company and more so with response times exceeding 10-minutes as the fire will spread from the room of origin due to flashover conditions.

It is recommended that the City of Regina identify geographic areas that exceed industry best practice response time and work with the construction industry to educate homeowners on the availability of fire-resistant construction methods.

Technology Consideration

- RFPS, working with their municipal partners, should use the HIRF model to reduce fire risks.
- The intent of the use of technology and fire-resistant materials is to either extinguish the fire or minimize it until the arrival of fire personnel. Slowing the growth of fire increases the chance of survival for civilians and allows firefighters to quickly extinguish the fire in a safe and efficient manner. Smaller fires are safer to suppress and require less resources on scene.

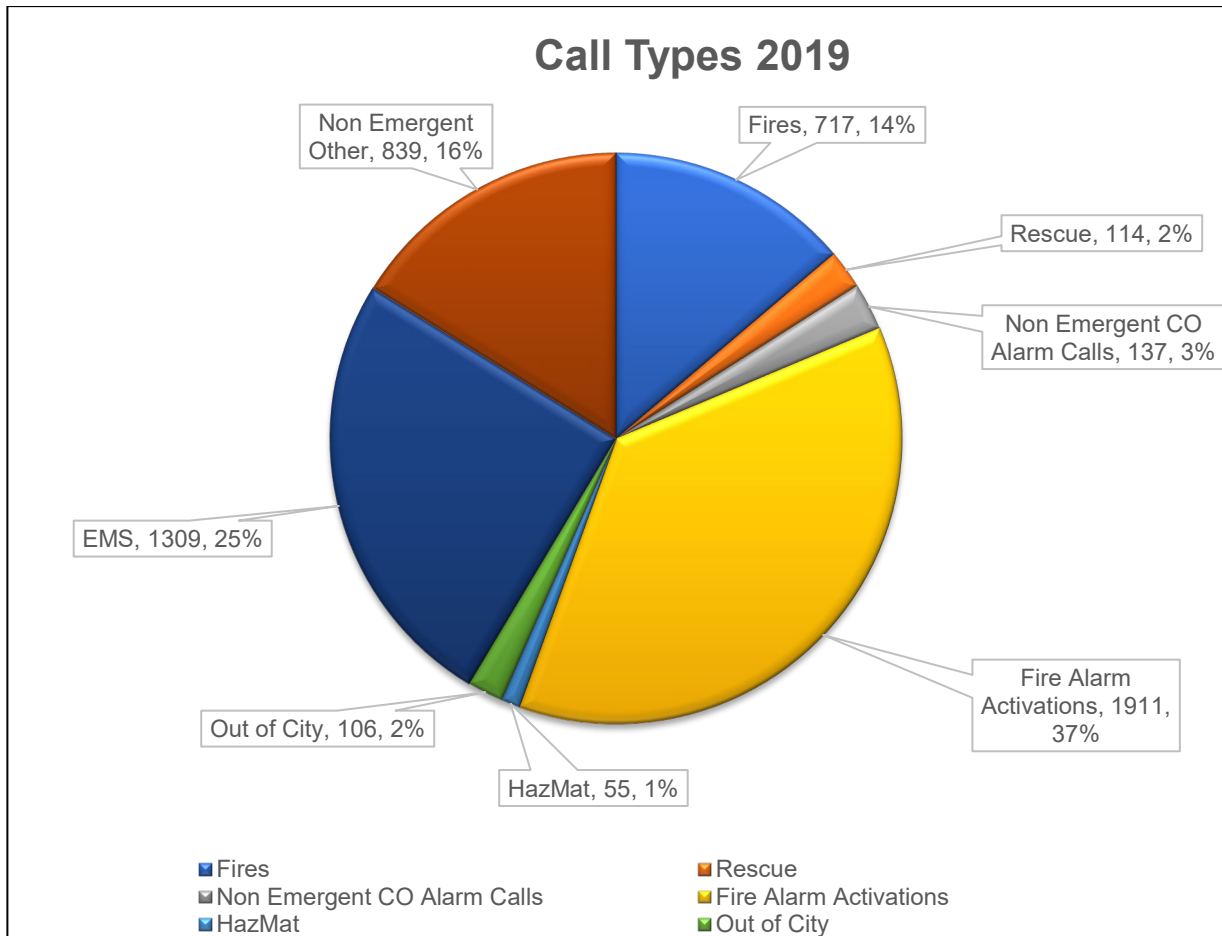
4.2 Emergency Response Data

The RFPS responds to a wide variety of calls including alarm calls, fires, medical responses, rescue calls, hazardous materials, and assisting the public in a variety of ways. The following chart breaks down the call types.

²⁸ High Intensity Residential Fires Working Group, Final Report, October 31, 2007

It is important to note that some types of calls such as Hazardous Materials and Rescue calls, while seemingly low in comparison, are high risk calls to the public and potentially the firefighters. They still occur in numbers that are significant on their own. For example, RFPS responds to an average of one hazardous materials call per week and two rescue calls per week. These are the high risk/low frequency calls that the Fire Department must ensure they are prepared for with training, equipment, and resources.

FIGURE #10: 2019 Call Types



The following table identifies the City of Regina 90th Percentile Times for all calls in comparison to the NFPA Standards.

TABLE #6: 90th Percentile Times

90 th Percentile Times				
	Alarm Processing	Turnout	Travel	Response
NFPA Standard	1:04	1:20	4:00	6:24
2016	1:33	2:35	7:04	10:23
2017	1:32	2:33	6:53	9:56
2018	1:33	2:25	6:47	10:08
2019	1:32	2:24	7:12	10:35

The NFPA Standards are the goals the high-performance fire services target. Throughout this document there are a number of items discussed that can assist the City in reducing the 90th percentile times. These have included items such as mapping displays at the stations that would assist in reducing turnout times, additional stations strategically placed across the City, along with traffic light pre-emption which would reduce travel time, etc.

RFPS is an Accredited Agency through the CFAI. As such, the Department is required to track its response data based on the following criteria:

- Moderate-High & Special Risk Structure Fires
- Moderate Risk Emergency Medical Services
- Moderate Risk Hazardous Materials (Hazmat) response
- High & Special Risk Hazmat
- Moderate & Special Risk Vehicle Rescue
- Moderate & Special Risk Technical Rescue [2] Services

The response numbers shown in TABLE #7 are for emergency responses. As such, they do not represent the total number of calls that RFPS responds to throughout the year. In the following figure, ERF stands for *Effective Response Force*.

These stats demonstrate that for critical calls, the fire service has a much better compliance to the NFPA standards.

TABLE #7: Response Data

Moderate, High & Special Risk Structure Fires - 90th Percentile Times - Baseline Performance		2015-2019	2019	2018	2017	2016	2015	Target (Agency Benchmark)
Alarm Handling	Pick-up to Dispatch	0:01:15	0:01:12	0:01:11	0:01:13	0:01:07	0:01:28	0:01:20
Turnout Time	Turnout Time 1st Unit	0:02:09	0:02:05	0:02:04	0:02:11	0:02:16	0:02:09	0:02:00
Travel Time	Travel Time 1st Unit Distribution	0:04:04	0:04:09	0:03:48	0:04:02	0:04:33	0:04:14	0:04:10
	Travel Time ERF Concentration	0:06:52	0:07:01	0:06:31	0:07:04	0:06:45	0:06:50	0:07:00
Total Response Time	Total Response Time 1st Unit on Scene Distribution	0:06:40	0:06:39	0:06:19	0:06:41	0:06:52	0:06:40	0:06:50
		1164	260	229	227	222	226	
	Total Response Time ERF Concentration	0:09:38	0:09:47	0:09:01	0:09:50	0:09:33	0:09:41	0:09:40
		618	126	119	126	122	125	

Moderate Risk Emergency Medical Services - 90th Percentile Times - Baseline Performance		2015-2019	2019	2018	2017	2016	2015	Target (Agency Benchmark)
Alarm Handling	Pick-up to Dispatch	0:00:44	0:00:43	0:00:42	0:00:46	0:00:50	0:00:43	0:00:45
Turnout Time	Turnout Time 1st Unit	0:02:00	0:02:02	0:02:00	0:02:04	0:02:03	0:01:51	0:02:00
Travel Time	Travel Time 1st Unit Distribution	0:04:08	0:04:06	0:04:04	0:04:12	0:04:08	0:04:10	0:04:10
	Travel Time ERF Concentration	N/A	N/A	N/A	N/A	N/A	N/A	
Total Response Time	Total Response Time 1st Unit on Scene Distribution	0:06:16	0:06:10	0:06:15	0:06:14	0:06:25	0:06:09	0:06:15
		5471	1132	1100	1019	1044	1176	
	Total Response Time ERF Concentration	N/A	N/A	N/A	N/A	N/A	N/A	
		4902	1008	1001	919	968	1006	

Moderate Risk Hazmat - 90th Percentile Times - Baseline Performance		2015-2019	2019	2018	2017	2016	2015	Target (Agency Benchmark)
Alarm Handling	Pick-up to Dispatch	0:02:09	0:02:22	0:02:07	0:01:44	0:01:55	0:02:23	0:02:00
Turnout Time	Turnout Time 1st Unit	0:02:21	0:02:15	0:02:03	0:02:49	0:02:19	0:02:10	0:02:20
Travel Time	Travel Time 1st Unit Distribution	0:06:25	0:05:19	0:08:03	0:07:13	0:04:38	0:08:05	0:06:00
	Travel Time ERF Concentration	0:10:44	0:10:43	0:10:39	0:09:07	0:11:47	0:12:57	0:11:00
Total Response Time	Total Response Time 1st Unit on Scene Distribution	0:09:45	0:08:18	0:11:19	0:11:03	0:08:13	0:10:49	0:08:30
		127	27	24	26	21	29	
	Total Response Time ERF Concentration	0:14:52	0:13:54	0:15:09	0:11:46	0:15:44	0:16:26	0:15:00
		113	25	20	23	19	26	

High & Special Risk Hazmat - 90th Percentile Times - Baseline Performance		2015-2019	2019	2018	2017	2016	2015	Target (Agency Benchmark)
Alarm Handling	Pick-up to Dispatch	0:01:35	0:01:30	0:01:18	0:01:26	0:01:25	0:02:41	0:02:00
Turnout Time	Turnout Time 1st Unit	0:02:23	0:02:18	0:02:09	0:02:50	0:02:16	0:02:22	0:02:20
Travel Time	Travel Time 1st Unit Distribution	0:05:29	0:05:02	0:05:30	0:05:52	0:04:15	0:04:56	0:06:00
	Travel Time ERF Concentration	0:10:54	0:09:51	0:09:57	0:11:42	0:10:47	0:11:08	0:11:00
Total Response Time	Total Response Time 1st Unit on Scene Distribution	0:08:15	0:07:44	0:08:14	0:08:33	0:07:00	0:08:38	0:08:30
		110	20	28	24	22	16	
	Total Response Time ERF Concentration	0:14:15	0:13:08	0:13:26	0:15:50	0:13:50	0:14:43	0:15:00
		81	15	24	17	14	11	

Moderate & Special Risk Vehicle Rescue - 90th Percentile Times - Baseline Performance		2015- 2019	2019	2018	2017	2016	2015	Target (Agency Benchmark)
Alarm Handling	Pick-up to Dispatch	0:01:08	0:01:06	0:01:05	0:01:08	0:01:08	0:01:11	0:01:10
Turnout Time	Turnout Time 1st Unit	0:02:03	0:02:01	0:02:03	0:02:06	0:02:03	0:01:54	0:02:00
Travel Time	Travel Time 1st Unit Distribution	0:04:14	0:04:23	0:04:13	0:04:31	0:04:09	0:03:57	0:04:10
	Travel Time ERF Concentration	0:04:45	0:04:45	0:04:54	0:04:58	0:04:31	0:04:47	0:05:00
Total Response Time	Total Response Time 1st Unit on Scene Distribution	0:06:39	0:06:42	0:06:39	0:07:06	0:06:31	0:06:22	0:06:50
		491	92	104	75	145	75	
	Total Response Time ERF Concentration	0:07:27	0:07:20	0:07:42	0:07:32	0:07:25	0:07:13	0:07:30
		359	67	74	55	109	54	

Moderate & Special Risk Technical Services - 90th Percentile Times - Baseline Performance		2015- 2019	2019	2018	2017	2016	2015	Target (Agency Benchmark)
Alarm Handling	Pick-up to Dispatch	0:03:09	0:02:59	0:02:43	0:01:45	0:03:14	0:02:13	0:02:20
Turnout Time	Turnout Time 1st Unit	0:02:56	0:02:08	0:01:43	0:02:15	0:03:35	0:03:06	0:02:20
Travel Time	Travel Time 1st Unit Distribution	0:04:06	0:03:31	0:03:35	0:05:20	0:08:19	0:03:35	0:05:00
	Travel Time ERF Concentration	0:08:42	0:09:00	0:06:13	0:09:07	0:10:43	0:07:44	0:09:00
Total Response Time	Total Response Time 1st Unit on Scene Distribution	0:09:20	0:07:23	0:06:50	0:09:22	0:14:30	0:07:26	0:09:00
		31	6	5	5	8	7	
	Total Response Time ERF Concentration	0:12:08	0:12:21	0:09:17	0:12:12	0:13:45	0:09:19	0:12:00
		19	4	3	4	7	1	

During the review of the response data no anomalies were noted in the data, which demonstrates a good level of quality assurance in relation to the accuracy of the response numbers that RFPS collects and retains. As can be seen in the two years of response data, RFPS is doing a good job at meeting the NFPA and department accreditation benchmark response times. As such, the Department should be commended for this excellent effort.

4.2.1 Future Call Volume Expectations

RFPS has a call volume of approximately 5,000 annual emergency calls for the past several years. This equates to approximately 19.5 calls per 1,000 population. The population development has planned for an additional 50,000 people in the works and a potential to grow by 100,000 by the year 2038*. In addition, the City continues to add Employment Areas.

RFPS could theoretically see an increase of 1,000 calls with the current development plan that is underway and an increase of more than 2,400 calls annually by 2038, which would equate to approximately 8,400 calls per year.²⁹

Note: if there is a change in the tiered response protocol for medical responses, calls could increase dramatically. Medical calls make up 50-60% of the calls in many urban fire departments (e.g. London, Ajax). It is very possible that there could be an additional 3,000 medical calls if the protocols are changed, dependent on the changes made.

4.3 Traffic Light Pre-emption

There is a significant portion of the Master Fire Plan dedicated to getting firefighters to the scene of a call as quickly as possible. This includes discussion on 90th percentiles, station locations, and the time to assemble an effective firefighting force. Response time is also critical in medical emergencies such as cardiac arrests where survivability declines rapidly after 4 minutes, and in other emergencies such as anaphylaxis and severe bleeding, where minutes make the difference in survivability. One of the factors of travel time to emergencies in traffic congestion.

Responding to emergency calls also poses a high risk for collision when apparatus are traveling through red lights.

²⁹ Design Regina Official Community Plan

Traffic light pre-emption, where the traffic lights change to provide the responding fire trucks the green light and priority in intersections, has been found to be an effective tool in reducing response time and collisions.

It has been demonstrated in various studies that traffic light pre-emption in urban areas can reduce response time by as much as 20% (1 minute and 12 seconds in a 6-minute response) by reducing the number of times a fire truck has to slow, stop, and then accelerate at an intersection. It also reduces travelling on the wrong side of the centre line or median and those situations where other drivers do not see the emergency vehicle or hear the sirens when traversing an intersection against a red light.

Challenges with pre-emption systems are that during heavy traffic times it can take several minutes for traffic to resume its natural flow and has a ripple effect to intersections radiating out in all directions.

As technology advances, so do the types and capabilities of traffic pre-emption systems. The primary types include acoustic, optical, route-based, and GPS systems. High-level advantages and disadvantages of the three primary systems are listed in Appendix H

It is recommended that the City of Regina undertake an RFI (Request for Information) from traffic pre-emption providers to assess the potential benefits based on the road network and traffic patterns of the city, types of systems that may be appropriate, options available, and estimated costs.

SECTION 5: Facilities, Vehicles, and Equipment

5.1 Fire Station Review

Fire stations should be positioned to offer the most efficient and effective response to the community they serve. Centering them within a determined response zone that is simply based on “timed” responses is not always the best option to implement. Fire station location depends on many factors such as key risks within the response zone, future growth of the community, and the response team composition. Another consideration is the geographical layout of the community that can include natural barriers or divides (such as water, railway tracks) that may make it necessary to have some stations located within proximity of each other.

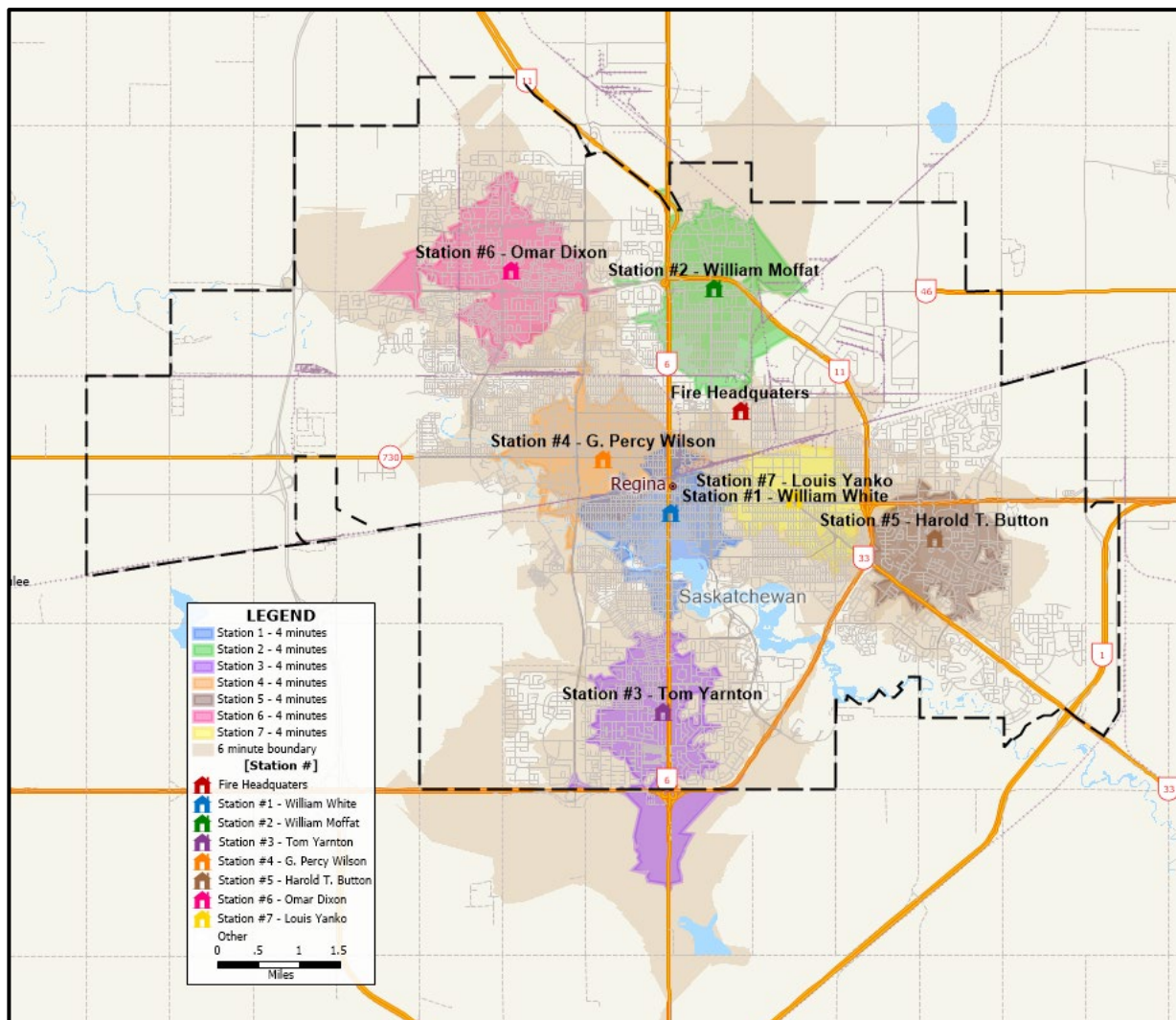
Fire stations should be situated to achieve the most effective and safe emergency responses. Distance and travel time may be a primary consideration; however, if a basic expectation of response time is set by the community’s decision makers, a more realistic level of service and fire station location criteria can be identified.

In the following maps, the shaded area around the fire station denotes a response time zone:

- The response time zone in the following map is for four-minute drive time. This is the NFPA recommended drive time for career fire departments.

The response mapping and related response data supplied in this document should not be taken in isolation. A full in-depth study along with an annual report submitted to Council by the Fire Chief with an update on the key performance measures and expectations is required.

FIGURE #11: Drive Time Coverage of 4-Minutes from Each Fire Station



This map illustrates that Regina is well covered in the major populated areas based on response time criteria. There are, however, some less densely populated sections of the City that are outside of the 4-minute drive time. These are located to the west and eastern portions of the City. With the anticipated growth projections, the need for future fire station and/or joint partnerships may be a reality. More discussion on this topic will be found later in the document.

There are seven fire stations located throughout the City. A review of the existing facilities was conducted by Emergency Management & Training Inc. and will be addressed in this section. This walkthrough consisted of a visual inspection; no destructive testing or engineering assessment was conducted.

- #1 Station - William White (1986): Staffing equipment consists of 2 Captains, 6 firefighters, 2 Engine Companies, and water rescue.

- #2 Station - William Moffat (2001): Staffing and equipment consists of 1 Captain, 3 firefighters, 1-Engine Company, Assistant Chief Command Unit, Wildland Unit, Operational Support Unit and command bus.
- #3 Station - Tom Yarnton (1991): Staffing and equipment consists of 2 Captains, 6 firefighters, 1-Engine Company, 1-Quint Company, Wildland Unit, decon trailer.
- #4 Station - Percy Wilson (2010): Staffing and equipment consists of 2 Captains, 6 firefighters and 2 Engine Companies.
- #5 Station - Harold Button (2001): Staffing and equipment consists of 1 Captain, 3 firefighters, 1-Engine Company, air supply trailer, trench trailer, tech rescue, service truck.
- #6 Station - Omar Dixon (1979): Staffing and equipment consists of 2 Captains, 6 firefighters, 1-Engine Company, 1-Quint Company, Hazmat Rescue.
- #7 Station - Louis Yanko (1984): Staffing and equipment consists of 2 Captains, 6 firefighters, 1-Engine Company, 1-Quint Company and water tanker.

In 2018 RFPS Fire Headquarters and the Education and Training Centre underwent renovations to make a more modern and efficient workplace.

Stations 2 and 5 are of the same design and stations 6 and 3 are of the same design; a substantial budgetary saving can occur when a station design is used more than once. When utilizing the plans from another station, benefits can occur as staff can provide feedback where minor design changes can improve overall station efficiencies. The drawback of utilizing another station design as the focus may be on saving taxpayer dollars and building a station that does not fit the need of the department for the geographic location it is to serve. Overall, the fire stations are well equipped with a few showing their age in terms of station design (dorms), lack of storage space, and sufficient exercise facilities.

5.1.1 Fire Headquarters

Fire headquarters is located at 1205 Ross Avenue. It was built in 1979 with renovations completed in 2017, a new roof in 2009, and a refreshment of the interior in 2003. This facility is home to RFPS Administration, Fire Prevention & Public Education, Training and Communications.



This building appears to be in good condition, but it is at capacity and will not allow for any future staffing expansion. As such, future consideration should be given to an addition to this facility if more staff are hired.

Costing for an expansion would depend on the area being expanded and what type of specialized equipment, if any, is required within that expansion.

5.1.2 Fire Station #1

Fire Station #1 is located 2585 13th Avenue and was built in 1986.



Although this station is 36 years old, it appears that upgrades have been made over the years.

The general lifespan of a fire station is approximately 50 years, unless major upgrades and renovations have been completed on the facility. .

5.1.3 Fire Station #2

Fire Station #2 is located a 1700 9th Avenue North and was built in 2001.



This station is 19-years old and was found to be in good condition with no recommendations for operational improvement at this time.

5.1.4 Fire Station #3

Fire Station #3 is located at 2640 31st Avenue and was built in 1991.



This station is 29 years old and was found to be in good condition with no recommendations for improvement at this time but it is anticipated that regular building maintenance will be required in the future.

5.1.5 Fire Station #4

Fire Station #4 is located at 3855 Dewdney Avenue and was built in 2010.



This station was found to be in good condition.

5.1.6 Fire Station #5

Fire Station #5 is located at 2700 Arens Road and was built in 2001.



This station was found to be in good condition.

5.1.7 Fire Station #6

Fire Station #6 is located at 303 Rink Avenue and was built in 1979.



In 2019, the backup generator for Station 6 was replaced as part of the continuous evaluation and maintenance of the fire stations.

Even though this facility was found to be in good condition, there is evidence that space is at a premium both on the apparatus floor and also with office space. This facility is 41 years of age and is coming close to the end of the 50 year lifecycle. As such, consideration should be given to either start planning for the building of a new fire station within the next 20 years, or plans for upgrades to allow this facility to meet the future needs of RFPS.

5.1.8 Fire Station #7

Fire Station #7 is located at 132 Victoria Avenue and was built in 1984.



Although this station is 36 years old, it appears to be in relatively good condition. Regular (and continued) maintenance of this station will ensure it reaches its full service cycle. A turnout room to store bunker gear should be investigated as part of the cancer prevention program.

5.1.9 Turnout Gear

There continues to be growing evidence of firefighters being exposed to cancer-causing agents. In 2014 the National Institute for Occupational Safety and Health (NIOSH) published research that stated firefighters have a 14% increase of cancer related deaths as compared to the general population. In Saskatchewan, 15 types of cancers for career and volunteer firefighters are considered presumptive and firefighters are presumed to have the cancer as a result of their firefighting activities.

Currently RFPS is striving for a second set of turnout gear assigned to all firefighters. Turnout gear has a 10-year life expectancy, but this is seldom achieved in a fire department with a high call volume such as RFPS. The replacement schedule for turnout gear in RFPS is 5-years and once a firefighter is issued a new set of turnout gear, their original set becomes their spare set.

Up until a firefighter is issued a second set of turnout gear, they utilize spare gear when their turnout gear is being washed in one of the three fire stations equipped with a commercial washing machine designed specifically for firefighter turnout gear.

Currently when a member needs to have their turnout gear undergo an advanced cleaning, it is taken out of service and either washed at the fire station (if equipped with a commercial washing machine) or transferred to another station by the service truck. The firefighter will then find a spare set of gear to use until their turnout gear is cleaned and placed back into service. There are concerns that a member may not find a spare set of turnout gear that fits properly.

RFPS is to be commended for striving for the issuance of a second set of turnout gear for all firefighters, but there is a concern over the length of time until all members will have their second set of turnout gear.

5.1.10 Small Equipment

Small equipment includes the thermal imaging cameras (TICs), extrication tools, AEDs, positive pressure fans, generators, and self-contained breathing apparatus.

RFPS utilizes a 15-year life cycle for self-contained breathing apparatus (SCBA) cylinders and has TICs on every frontline Engine. As technology changes, a review is made to determine the need of replacement and a cost analysis is conducted. There are various models of TICs on the market and they are now being integrated into the SCBA facepiece or through a control module that combines a TIC and cylinder pressure gauge. The TIC has been a great

advancement for the fire service in terms of rescue, suppression, overhaul, reduction of rekindles, and self-rescue.

Extrication tools have a 15-year replacement schedule and in recent years RFPS has included new extrication tools with new Engine acquisitions. This creates an economical method of replacing extrication equipment as fire truck manufacturers have the buying power to get better costing on equipment.

Small equipment appears to be well maintained and fits the needs of the department. As technology advances, battery-operated rescue tools and positive pressure fans have becoming lighter with the same or greater performance. Advances in firefighting technology should be evaluated for future purchases as it can improve service life and reduce costs

5.1.11 Public Safe Haven

A recommendation for consideration of each existing station is the implementation of the “Safe Haven” concept that has been built into many fire stations at other departments. These programs have a vestibule or lobby that someone fleeing a dangerous situation (e.g. domestic violence) can access and secure themselves in. This type of safe haven program not only makes each fire station more a part of the community, it also offers a place of safety for those in need of assistance.

The cost of implementation could range from \$2,000 to \$5,000 per installation. The range comes from an option to install a phone box or panic button in the vestibule or lobby that is connected directly to the Fire Communications office and can lock the vestibule door until help arrives.



5.2 Training Facility

RFPS has a training centre located at the Headquarters property at 1205 Ross Avenue. The facility was built in 1964 with renovations done in 2005 after a fire occurred in the garage. The training facilities are well equipped to provide training on a wide range of evolutions.

The training facility is located at the Education and Training Centre (ETC) and, as identified in the Accreditation (2017) document,³⁰ it is approximately 15,000m² in size, with two classrooms, one 37m² and the other 100m² in size. The 100m² classroom can be divided by a folding partition wall into two 50m² classrooms. The classrooms are equipped with connection to computers and television, projectors, and other new technology.

The exterior facilities include a tanker trailer for dangerous goods training, vehicle extrication, and a 75-square meter, 18-meter-high tower for rope rescue and high-rise training. A residential single-storey structure is also located at the ETC training grounds and is utilized for search and rescue, ventilation, and fire investigation training.



³⁰ Accreditation Report, July 5, 2017 prepared by the Commission on Fire Accreditation International for the Regina Fire and Protective Services



Having a local training facility offers the ability to train and practice on a wide range of training programs and keeps the fire service resources in the community it serves.

5.3 Mechanical/Maintenance Division – Apparatus and Equipment

The Mechanical/Maintenance Division is located at the Education and Training Centre and is equipped with their own set of bays, office area, and parts section.

RFPS has 2 full-time mechanics with one specifically trained as an Emergency Vehicle Technician (EVT) and the second will soon be certified as an EVT. These qualifications permit them to conduct maintenance and repairs on the chassis, pump, and aerial devices.

This Division conducts the servicing and maintenance tasks on all fire service mobile, portable, and stationary equipment. The Division is also responsible for the Canadian Standards Association (CSA) Z94 Respiratory Protection Program and mandatory program administrator roles. The Division takes care of stationary equipment that includes stand-by generators, breathing air compressors, fill stations, and portable equipment such as smaller pumps, chainsaws, Jaws of Life, lawn mowers, snow blowers, outboard motors, and boats.

In addition to the duties on fire apparatus, RFPS is striving to have both mechanics complete the Certified Airmask Repair Education (C.A.R.E.) training in order to provide redundancy for the maintenance personnel who conduct repairs and maintenance of the SCBA in-house.



The facility was found to be in good condition. Interviews with staff confirmed that the present facility is meeting the general needs of the Division.

5.3.1 Fleet and Equipment

The Regina Fire & Protective Services has 7 fire stations located throughout the city. There are 9 frontline Engines, 3 frontline aerials, and 4 reserve Engines plus one reserve aerial. Overall, RFPS has a well-maintained fleet. The oldest frontline Engine, unit 117, is 15 years old and is scheduled for secondary status as a reserve Engine in 2020.

When assessing a Fire Department's apparatus, the FUS considers the age of the truck as one of its guidelines. RFPS follows the FUS guidelines of replacing frontline Engines and moving them into a secondary response unit after 15 years of service. Regina's category for the FUS recommendations has been highlighted in blue font and shading.

Apparatus Age	Major Cities ³	Medium Sized Cities ⁴ or Communities Where Risk is Significant	Small Communities ⁵ and Rural Centres
0 – 15 Years	First Line	First Line	First Line
16 – 20 Years	Reserve	Second Line	First Line
20 – 25 Years ¹	No Credit in Grading	No Credit in Grading or Reserve ²	No Credit in Grading or Reserve ²
26 – 29 Years ¹	No Credit in Grading	No Credit in Grading or Reserve ²	No Credit in Grading or Reserve ²
30 Years ¹	No Credit in Grading	No Credit in Grading	No Credit in Grading
<ol style="list-style-type: none"> 1. All listed fire apparatus 20 years of age and older are required to be service tested by a recognized testing agency on an annual basis to be eligible for grading recognition (NFPA 1071) 2. Exceptions to age status may be considered in small to medium sized communities and rural centre 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: <ol style="list-style-type: none"> a. a populated area (or multiple areas) with a density of at least 400 people per square kilometre; AND b. a total population of 100,000 or greater. 4. Medium Communities are defined as an incorporated or unincorporated community that has: <ol style="list-style-type: none"> a. a populated area (or multiple areas) with a density of at least 200 people per square kilometre; AND b. a total population of 1,000 or greater. 5. Small Communities are defined as an incorporated or unincorporated community that has: 			

-
- a. no populated areas with densities that exceed 200 people per square kilometre; AND*
 - b. does not have a total population in excess of 1,000.*

The replacement of frontline fire apparatus is not legislated, but best practice dictates that after a maximum of 15-years as a frontline responding apparatus in a major city, there is enough wear and tear on the chassis and drivetrain to justify moving it to a secondary response unit or selling. Light duty vehicles such as Rapid Intervention and Administration Vehicles typically have a 7 to 10-year life span. The Canada Revenue Agency uses a 7-year depreciation on these types of vehicles. Many fire departments will pass these vehicles on to other city departments with less critical uses after that time.

A review of the Fire Fleet Capital Budget Forecast was conducted and RFPS demonstrates due diligence in replacing fire apparatus, however some miscalculations were noticed in the forecast document and it is suspected that these have occurred as a result of RFPS merge into a new asset management module. It is evident that Pumpers 123 & 124 should not be replaced in 2025 and this error will have to be corrected once the M5 asset management module is implemented. The following charts record the existing replacement schedule.

FIGURE #12: Existing Replacement Schedule

Dollar values shown in thousands of dollars based on today's cost.

Apparatus	Service Life	2021	2023	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Pumper 115 (2004) Spartan	18	1100												
Pumper 116 (2004) Spartan	19		1100											
Pumper 117 (2006) E-One	19			1100										
Pumper 118 (2006) E-One	20				1100									
Pumper 119 (2011) Spartan	16					1100								
Ladder 207. (2011) Spartan	17						1275							
Pumper 120 (2011) Spartan	18							1100						
Ladder 208 (2011) Spartan	19								1275					
Pumper 121 (2011) Spartan	20									1100				
Ladder 209. (2011) Spartan	21										1275			
Pumper 122 (2011) Spartan	22											1100		
Haz Mat (2013) Rosenbauer	20											675		
Pumper 307 (2014) Rosenbauer	20												850	
Raptor 2014 Rosenbauer	21													1600
Total		1100	1100	1100	1100	1100	1275	1100	1275	1100	1275	1775	850	1600

The FUS fire rating considers the year of frontline apparatus and recommends that frontline apparatus be replaced and moved into a secondary response role after 15 years and this in turn reflects positively on the commercial and residential insurance rates.

EMT recommends that the apparatus replacement schedule be reviewed, and frontline apparatus be scheduled for replacement after 15 years.

RFPS mechanics follow the NFPA 1911, *Standard for the Inspection, Maintenance, Testing and Retirement of In-Service Automotive Fire Apparatus*. This standard also identifies a 15-year replacement cycle on frontline fire apparatus and is based upon criteria identified in the standard. In some cases, a heavily utilized Engine may have enough wear and tear on it to support its replacement before the 15-year time frame.

RFPS has a solid apparatus replacement program where they will strive to replace apparatus to meet the FUS guidelines.

In the capital budget it is a challenge to clearly identify the replacement cost of an apparatus in 15 years' time. As a general practice when replacing fire apparatus, it is noted that on average fire apparatus such as engines and aerials will increase in cost anywhere from 5-10% annually. To put this into perspective, an engine that was purchased in 2005 at a cost of \$500,000 would be expected to cost around \$875,000 in 2020 with a 5% annual cost increase. An engine purchased in 2020 at \$875,000 can be expected to cost \$1.53 million in 2035.

The apparatus replacement plan reviewed had placeholder numbers of \$1.1 million for an engine, \$1.275 million for a quint and \$1.6 million for an aerial replacement. These numbers are realistic based on 2020/2021 values, however, should have an annual adjustment based upon the 5-10 percent annual cost increase of fire apparatus for the 25-year capital plan.

5.4 Future Technology

5.4.1 Personal Thermal Imaging Camera (TIC)

RFPS has TICs on every frontline pumper. As technology changes a review is made to determine the need of replacement versus a department want and a cost analysis is conducted. There are various models of TICs on the market and they are now being integrated into the SCBA facepiece. The TIC has been a great advancement for the fire service in terms of rescue, suppression, overhaul, reduction of rekindles and self-rescue. Manufacturers are now providing variations

of TICs incorporated into the SCBA facepiece or through a control module that combines a TIC and cylinder pressure gauge.

All TICs are not the same and gone are the days where a one style TIC will fit the needs of the fire department. A situational awareness TIC is used by the firefighter to locate the fire, find an egress and to prevent disorientation. A decision-making TIC typically has a higher resolution and is used to assist with tactical decision making, determination of exact temperature readings, hose steam placement and search and rescue.

In 2019 the Los Angeles Fire Department moved in the direction of issuing situational awareness TICs to every firefighter to not only improve search and rescue but firefighter self-rescue as well. The issuing of a personal situational awareness TIC for every firefighter will increase the speed and safety of firefighter search and rescue operations and improve firefighter self-rescue if a firefighter becomes lost or disorientated.

Statements from NFPA 1408, *Standard for Training Fire Service Personnel in the Operation, Care, Use, and Maintenance of Thermal Imagers*, Sections 4.1 and 4.2, the consensus standard on training for thermal imaging use, follow:

- A thermal imaging training program shall be implemented.
- Risks to participants during training shall be kept to a minimum.
- The authority having jurisdiction (AHJ) shall establish written policies for TIC training that meet the requirements of this standard.
- The policy shall address the training requirements for types of incidents where TICs may be used.
- The training policy shall include an annual review of member competence in TIC technology, operation, application, use and limitations, care, and maintenance.
- TIC training shall include practical evolutions using TICs.
- The training program shall include both individual and crew training.
- Members shall be provided with TIC training and education before being permitted to operate TICs per the AHJ.
- Before new or unfamiliar TICs are placed into service, training and education relating to those imagers shall be provided for all affected members.
- Members shall be provided with classroom education and hands-on familiarization in TIC functions before being permitted to operate TICs in IDLH atmospheres.

To enhance firefighter safety, the RFPS should have personal situational TICs available for all frontline apparatus. A minimum of 3 per apparatus is required plus a spare for each station will require the acquisition of 43 personal TICs within the next 5 years.

It is recommended that RFPS implement a formal TIC training program and implement policies and procedures for the use of TICs.

5.4.2 Drone Technology

In 2019 the NFPA released NFPA 2400 *The Standard for Small Unmanned Aircraft Systems (sUAS) Used for Public Safety Operations*. The standard identifies the minimum requires for the use of drones in the fire service.

For emergency incidents drones are able to cover a lot of ground and have proven beneficial for hazardous materials incidents (recent train derailment by Humboldt), search and rescue operations near large bodies of water, wildland fires, motor vehicle accidents and situational awareness/hot spot identification at structure fires. A benefit of drone technology is the potential to save time and money as extra personnel may not be needed to conduct scene assessments for hazardous material incidents as the drone can be quickly deployed and the Incident Commander gets not only a live view of the incident, but a view where potential hazards can be quickly identified and thereby preventing firefighter injuries.

For non-emergency incidents drones are being used for preplanning with aerial photos, identification of the best location for apparatus staffing for emergencies and preplanning, assessment of potential hazards such as spring thaw or freeze up of a large body of water. For post recovery operations the drone technology can play a vital part if surveying damage after a disaster. The use of drone thermal technology can also be used to locate victims during nighttime operations.

The New York Fire Department utilizes drone technology for second alarm fires or other critical incidents provide the Incident Commander (IC) vital information that the IC cannot see such as fire travel or structural integrity issues.

In 2016 the Winnipeg Fire Paramedic Service (WFPS) began its drone technology by creating an internal committee to identify the drone needs and overall direction of the technology. “The reception has been overwhelmingly positive, and the program has already demonstrated its value on many occasions.”³¹

³¹ Wilkinson, S (2019) *UAV's In The Fire Service*, Firefighting in Canada, <https://www.firefightingincanada.com/uavs-in-the-fire-service-27011/>

As of May 2019, the WFPS has 18 pilots trained in advanced operations in day and night flight as well as a cadre of visual observers to assist the pilots as well as obtaining flight permissions with NAV Canada to fly in controlled airspace.” This ensures our minimum manning staffing of one pilot and one visual observer on our rescue apparatus that responds with the UAV.”³²

The WFPS has successfully utilized the UAV at major fires and in one incident the IC and apparatus staging were more than 800 metres away with no direct view of the incident and the UAV provided real time video to guide risk assessments, planning and tactical deployment as well as stream placement.

Drone pilots must follow the *Canadian Aviation Regulations (CARS) Part IX-Remotely Piloted Aircraft Systems* that contain the rules for drones up to 25 kilograms. Advanced operations include flying in a controlled airspace, flying over bystanders, or flying within 30 meters of bystanders.

There are numerous features available by drone manufactures and at the minimum, a drone for RFPS should have 256 encryption to keep data secure, obstacle avoidance system to detect and avoid obstacles while hovering, anti-collision beacon for lowlight and night conditions and thermal imaging technology.



Photo: Firefighting in Canada, UAVs in the fire service, April 11, 2019

RFPS can benefit from drone technology in suppression, rescue, preplanning, and special events planning. As such, it is recommended that RFPS implement a Drone program to enhance firefighter safety and be utilized for emergency operations, preplanning, and emergency management planning.

³² Wilkinson, S (2019) *UAV's In The Fire Service*, Firefighting in Canada, <https://www.firefightingincanada.com/uavs-in-the-fire-service-27011/>

SECTION 6: Risk Assessment and Emergency Management

The first and most effective way to reduce injuries, death, and property damage due to fire is through public education, inspections, and enforcement. The Fire Prevention Program addresses these key components of fire safety which starts with conducting a community risk assessment.

6.1 Community Risk Assessment – Current and Future Needs

When conducting a community risk assessment, it is important to remember that it is Council that approves the level of service within the community. It is therefore the Fire Chief's responsibility to inform Council on the risks that exist within the community, along with the related needs and circumstances. Based on the information received from the Fire Chief, Council can make an educated decision regarding recommended improvements and/ or adjustments.

The NFPA 1201 – *Standard for Providing Fire and Emergency Services to the Public*, section 4.3.1 states, "The Fire & Emergency Service Organization shall carry out a program to develop public awareness and cooperation in management of risk, based on analysis of relevant loss records and potential hazards in the identifiable physical and social sectors of the community."

Section 4.3.5 notes that the Fire and Emergency Services Organization shall provide customer service-oriented programs and procedures to accomplish the following:

1. Prevent fires, injuries, and deaths from emergencies and disasters
2. Mitigate fires, injuries, deaths, property damage, and environmental damage from emergencies and disasters
3. Recover from fires, emergencies, and disasters
4. Protect critical infrastructure
5. Sustain economic viability
6. Protect cultural and historical resources

The "needs" of a community can be defined by identifying and cataloging the types of buildings, infrastructure, and demographics of the local area, which in turn can be extrapolated into the types of services that would be offered and required. The "circumstances" are considered the ability to afford the level of service to be provided. Together, the needs and circumstances assist in identifying a level of service for the community. This combination meets the expectations of the public for safety and the affordability of this level provided.

Conducting a risk assessment is a practical information gathering and analyzing exercise. It is intended to create a community fire profile that will aid in identifying appropriate programs or activities that can be implemented to effectively address the community's fire safety needs. As the community changes, the document should not become dormant, as the results are only accurate to the time of which the review was conducted.

The recently updated *Fire Protection and Prevention Act.*, along with the NFPA 1730 Standard on *Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations* note that a risk assessment review should be conducted at a minimum every five (5) years or after significant change.

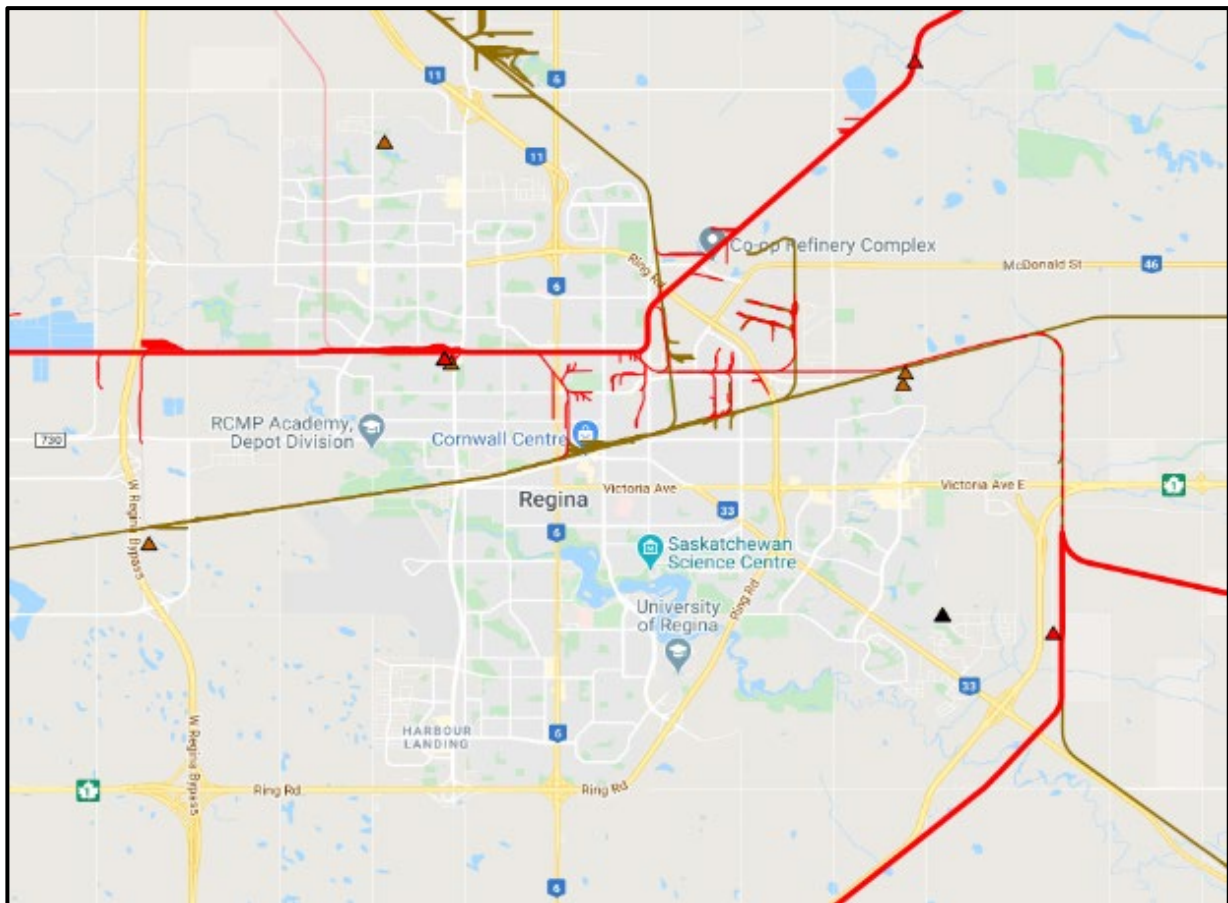
The NFPA 1730 standard also establishes a process to identify and analyze community fire risks. There are seven (7) components of a Community Risk Assessment outlined in the NFPA Standard. These components are:

1. Demographics
2. Geographic overview
3. Building stock
4. Fire experience
5. Responses
6. Hazards
7. Economic profile

6.1.1 Current Condition

The City of Regina is comprised of a mix of residential, commercial, and industrial buildings. As seen in the following map (Figure 13), the City is crisscrossed with several railways that could at times reduce or restrict the ability of fire trucks to take the most direct route to an emergency incident.

FIGURE #13: Regina CN Railway System



The Fire Chief and his team have been very proactive in identifying all these concerns and have created response criteria for each type of incident or hinderance to a timely response. RFPS team should be commended for their diligent efforts.

RFPS has also created a list of vulnerable occupancies, hazardous materials sites and other facilities and/or concerns that may impact the efficiency and effectiveness of their response in cases of emergencies.

In relation to its fire prevention and public education initiatives, RFPS has a Fire Prevention/Public Education Division that is proactive in identifying present and future program needs. The Division is aware of the minimum fire prevention programs required for the community. The minimum acceptable level that a municipality needs to provide includes the following:

- Smoke Alarm/Carbon Monoxide Program
- Fire Safety Education materials distributed to residents/occupants
- Inspections upon complaint or Request to Assist with code compliance

(including any necessary code enforcement)

The Fire Prevention/Public Education Division is doing an admirable job in meeting and exceeding these requirements and should be applauded for their efforts.

6.1.2 Preparing for Future Needs

Continual assessment of the community and its needs will allow RFPS to be proactive in its education and enforcement programs for the community and to all fire service staff. When fires or other emergencies occur within the community, the firefighters can be better prepared to cope with the emergencies because they are trained and aware of the unique hazards that are found within the community. These hazards need to be identified in a Risk Assessment conducted by Regina and its Fire Service.

TABLE #5: FUS Inspection Frequency Chart

Occupancy Type	Benchmark
Assembly (A)	3 to 6 months
Institutional (B)	12 months
Single Family Dwellings (C)	12 months
Multi-Family Dwellings (C)	6 months
Hotel/Motel (C)	6 months
Mobile Homes & Trailers (C)	6 months
Seasonal/Rec. Dwellings (C)	6 months
Commercial (F)	12 months
Industrial (F)	3 to 6 months

The FUS Suggested Inspection Frequency Chart is highly aggressive and being able to provide inspection frequencies at the noted levels may be difficult to achieve. As a benchmark, however, the FUS chart provides an optimal set of goals for RFPS to strive towards. Priority should be given to vulnerable occupancies, institutional facilities, hotels/motels, multi-family dwellings (including basement apartments), and assemblies.

Utilizing the Integrated Risk Management approach in conjunction with the guidance from NFPA 1730 standard will provide an overall picture of the resources, time, and tools required to keep the fire risks in the community to a manageable level (as defined by Council).

It is recommended that the Fire Chief direct the Fire Prevention and Public Education Division to review Regina's inspection program identifying levels of desired frequency for inspections noted in the FUS Chart above. The FUS strongly

recommends that a level of frequency be identified by the Fire Service in its quest towards ensuring a fire-safe community. RFPS may not be able to meet the FUS recommendations at this time, but with the additional inspectors recommended in the next five years a level of due diligence will occur in ensuring that inspections are consistently and regularly performed.

A thorough risk assessment can also avoid invalid comparisons between your fire service and others. A municipality with a similar population may have very different fire risks, and therefore very different fire protection needs. A thorough risk assessment will ensure that such comparisons are valid. By providing a valid basis for comparison, an efficient risk assessment can also provide confidence that innovations introduced elsewhere can be successfully applied in your municipality.

In relation to staffing (Fire Prevention) hour requirements, an initial assessment needs to be completed to identify hours presently being spent on inspections along with identification of the annual goal. By doing this assessment, future hourly requirements can be consolidated into a report to Council for the additional staffing recommended in this FMP.

Note: Due to the complexities with fire prevention inspections, along with the variety of building stock in a community, there is no industry standard formula for calculating the number of hours based on building stock. This can only be accomplished through experience, familiarity, and understanding of the community's needs.

6.2 Emergency Management Program

Emergency Preparedness and Business Continuity

Emergency Management & Training Inc. conducted a review of Regina's Emergency Management Program, including existing training for Regina employees and response planning. As mandated by *The Emergency Planning Act, 1989*, every local authority shall establish a local emergency measures organization, appoint a person as a local emergency measures coordinator, and establish a municipal emergency plan.

As noted in the 2017 Standards of Cover document, the EPBC section;

“...focuses on the coordination and planning for any event, whether man-made or natural, that has the potential to exceed the normal coping abilities of the day to day operations of the City of Regina. The EPBC considers both corporate and public expectations in preparing for all four phases of a disaster (Prevention/Mitigation, Preparedness, Response and Recovery). The EPBC Section is also the focal point for internal (such as the RPS) and

external (such as provincial and federal agencies) groups who by mandate or choice have a role to play in one of the four phases of a disaster. The Department employs one manager and one Business Continuity Coordinator that are assigned to this program.”³³

The Standards of Cover document states, “The Department considers both comparability to other similar fire departments as well as industry best practices, requirements, and research when evaluating system performance. The City of Saskatoon and Regina are comparables and it is noteworthy that the Saskatoon’s EMO staffs an EMO Director, Emergency Management Administrative Coordinator, Coordinator of Emergency Management, and Corporate Security Manager, Security System Technician and Technical Security Specialist and is in the process of hiring a Business Continuity person and a Regional Resilience Specialist, whereas Regina has one manager and one business continuity coordinator. There are no set standards for emergency management staffing but it is evident that based upon the population of Regina and the critical infrastructure within the City of Regina that EPBC should increase their staffing level to meet the demands of emergency management.

Saskatoon EMO has partnered with neighbouring communities and through a 50/50 funding model created the Regional Resilience Specialist position that will work with the partnering communities to establish a local emergency measures organization, appoint a person as a local emergency measures coordinator, and establish a municipal emergency plan. This is a proactive and progressive approach for smaller communities to get emergency management expertise into their communities and develop emergency management plans under a single coordinator. It is projected that the funding model will evolve in the future as more time and resources will be required to coordinate these activities. RFPS should investigate the feasibility of having a similar position.

6.2.1 City of Regina Municipal Emergency Response Plan

In the 2017 RFPS Accreditation Report it was identified that the EPBC operates an all hazards preparedness program and was in the process of refining the existing emergency response plan. For the RFPS FMP, it is prudent to review the MERP that was revised and updated in 2019.

The City of Regina MERP was recently updated for the 2019-2024 cycle. This is a well written and researched document and based upon feedback from the questionnaires, management, and a review of the MERP, several observations

³³ Regina Fire and Protection Services, 2017 Standards of Cover, p.23

and recommendations will be provided to facilitate the successful implementation of emergency planning for the City of Regina.

As noted in the Regina MERP, it is important to invest in a preparedness program for the following reasons:

- Up to 40% of entities affected by a natural or human-caused disaster never reopen.
- Ratepayers expect delivery of services on time.
- Insurance is only a partial solution; it does not cover all losses.
- Many disasters – natural or human-caused — may overwhelm the resources of even the largest public agencies, or they may not be able to reach every facility in time.
- News travels fast and perceptions often differ from reality. The City must reach out to ratepayers and other stakeholders quickly to level-set their understanding and expectations and avoid panic.

A formal declaration of the MERP provides both the authority and the responsibility to organizations to perform their tasks and allows senior officials to affirm their support for emergency management. As stated in the MERP, “The City’s preparedness program must be built on a foundation of management leadership, commitment and financial support. Without management commitment and financial support, it will be difficult to build the program, maintain resources and keep the program up to date (p.80)³⁴”.

The major strengths of the Emergency Response Plan (ERP) include:

- **Concept of Operations:** The City of Regina MERP provides a good description and explanation of the roles of personnel in the Emergency Operation Centre (EOC) including the City Manager, EOC Director, City of Regina agencies and voluntary organizations (through Emergency Social Services).
- **Corrective Action Process:** There is a thorough Post-Incident Analysis Guide included in the MERP. This process will be the basis for a continual improvement program in the City.
- **Administration, Logistics and Finance:** The MERP emphasizes the requirement for record keeping using the EOC forms. The importance of tracking expenses for the possibility of Provincial Disaster Assistance

³⁴ City of Regina Master Emergency Response Plan 2019-2024

Program (PDAP) is highlighted. The ERP has a strong focus on documenting for program improvement.

Some areas to consider for future revision of the MERP include:

- **Situation Overview:** The MERP reflects a strong basis in all-hazards planning. This is a flexible and adaptable approach to being able to respond to and recover from hazards. Consideration should be given to conduct a Hazard Identification and Risk Assessment (HIRA) to identify the hazards that are most likely to impact the City of Regina. Being proactive and conducting a HIRA provides more opportunity for the City of Regina to identify the required resources prior to the response. Upon completion of the HIRA, a summary of the results should be included in the MERP to assist with planning.
- **Public Information and Warning:** The MERP provides a good description of the responsibilities of the Public Information Officer (PIO) as the coordination point for all public information, media releases and internal information for the EOC. The MERP mentions a toll-free public information service but the number is not identified in the MERP. The number should be listed in the MERP along with how the public alerting system NotifyNow is utilized to alert the public with pre-scripted information bulletins.
- **Declaration and Approval of Plan:** A formal declaration of the MERP provides the authority and responsibility for organizations to perform their tasks. A statement should be included that says, “This plan supersedes all other plans,” and should be at the front of the MERP to indicate support and approval from senior management.
- **Record of Changes:** The version history of the MERP is found on page 91 of the document and all the necessary information is included. Each update or change to the plan should be tracked with the record of changes, date of change and the name of the person who made the changes/ revisions. As a public document, there should be consideration on what portions of the plan are available to the public. The City of Regina should consult with their legal department to determine what content can and cannot be made available to the public. For example, does the City of Regina want the personal cell phone numbers of administration available for the general public or media?

6.2.2 Hazard Identification Risk Assessment (HIRA)

The City of Regina ERP reflects a strong basis in all-hazards planning. All hazards planning provides a flexible and adaptable approach to being able to respond and recover from hazards. The City of Regina should also conduct a HIRA to identify

the hazards that are most likely to impact the municipality. The results of the HIRA can then help to:

- Identify relative probability and impact of the hazards
- Identify geographic areas likely to be affected by hazards
- Determine vulnerable critical facilities (e.g., assisted living facilities, schools, hospitals, critical infrastructure)
- Identify population distribution and locations, including any concentrated populations of individuals with disabilities, others with access and functional needs, or individuals with limited English proficiency, as well as unaccompanied minors and children in daycare and school settings
- Determine dependencies on other jurisdictions for critical resources
- Determine the process used by the jurisdiction to determine its capabilities and limits to prepare for and respond to the defined hazards (e.g. use the identified hazard as a basis for an exercise)
- Take actions in advance to minimize an incident's impacts, including short- and long-term strategies.

Based on EMT's review of this program, it is recommended that the City of Regina conduct a HIRA and review it on an annual basis to ensure that all risks are identified and addressed.

6.2.3 *NotifyNow*

The City of Regina implemented the use of NotifyNow as the mass communication system to alert citizens of immediate and important notifications. The system has not been adequately used or tested since its implementation and is not clearly identified in the MERP. This public alert system is a powerful tool and it should be identified in the MERP how NotifyNow will be utilized.

Based on the review of this program, it is recommended that:

- The public warning system NotifyNow be identified in the MERP as well as how it can be utilized and initiated.
- Consideration should be given to special needs populations.
- Pre-scripted bulletins save time and are easy to prepare in advance.
- RFPS should immediately educate the public in terms of NotifyNow and how as a mass communication system it is utilized to alert citizens of immediate and important notifications.

The MERP is very well written and demonstrates a high level of professionalism within EPBC. The MERP should be regularly reviewed and updated; a specific staff position should be responsible for this task. A common challenge with MERP

is the names of individuals and roles identified in the plan and the MERP should be reviewed at least annually for ensure that contact names are accurate, and any gaps or deficiencies are identified.

6.2.4 Incident Command System

The Incident Command System (ICS) is based upon best practices in Canada and the United States and is used for both small or large emergency and non-emergency planned events. The strength of the ICS is in making sure that the safety of responders and other personnel are a priority and an effective use of resources or elimination of the duplication of services is achieved.

There are four different types of Incident Command levels identified by ICS Canada:

- **ICS 100:** The awareness level training that introduces the participant to ICS topics and concepts.
- **ICS 200:** The awareness level training that is designed to help people function within the ICS. This level of training provides a greater depth regarding the functional areas and positions in the ICS.
- **ICS 300:** The level that is directed for supervisory functions and provides exposure to setting objectives, unified command, planning, demobilization, and termination of command. This level is focused on developing skills through practical exercises.
- **ICS 400:** The level that is directed for supervisory functions and is orientated to developing skills for complex incidents and the coordination of multiple incidents.

Currently there is minimum training for the EOC; however, there is no policy that identifies the minimum ICS level for any member required to work in the EOC. Although the Manager of Emergency Preparedness is moving towards ICS 300 for those expected to be in the EOC, a level of ICS 200 can be set as a minimum level of training for the EOC and should be identified in a policy.

Due to the importance of the functions of EOC, it is recommended that a policy be implemented that identifies ICS 300 as the standard for staff required to be in the EOC with ICS 200 being the minimum acceptable level for the EOC.

Regina EPBC currently does not have a member trained to provide ICS 100-400 training to the City of Regina and key stakeholders. This is something that should be looked into as Saskatoon EMO has several members in Police and Fire that are trained to deliver ICS training in accordance to ICS Canada. The importance of having individuals trained to the ICS standard for EOC roles and responsibilities

cannot be overemphasized and a business case can be made to have a position in EPBC solely responsible for ICS training and staff development, including City Councilors and senior administrators.

Mobile Command Centre

The mobile command centre (MCC) vehicle for the City of Regina is a converted 1952 GMC bus. The function of an MCC is essential during emergencies and non-emergencies as it serves as a single staging location where agencies can coordinate and communicate during the incident or event.

The MCC will generally see more use for non-emergency events (pre-planned) than it will for emergency events. In the City of Regina, the MCC could be used at large scale events like the Winter Classic, Grey Cup, concerts, and political rallies.

As noted in the City of Regina's Municipal Emergency Plan, "a pre-planned event is one that has the potential of creating a life safety issue, an increased burden to emergency response and City agencies, or generating a negative image for the City."³⁵ Pre-planned events require coordination and communication among first responders before, during and after the event and the MCC plays a critical role in this function.

There are several concerns over the age of the existing MCC, however there are no standards to follow stipulating when to replace or refurbish a mobile command centre. Having a 1952 GMC bus as an MCC creates problems as parts can be hard to attain for the chassis, axles, steering, suspension, drivetrain, and body parts.

Repairing or refurbishing an aged fire truck or mobile command centre vehicle does not change the age of the vehicle. It should be noted that repairing an older model like the existing MCC is essentially a short-term temporary measure, because future repairs can be expected simply due to its age. More importantly to note is that the MCC was originally a bus that was decommissioned as a transit bus due to age and mileage.

A modern MCC is generally custom designed for the customer and limitless options are available. It should be spacious and comfortable to work in as it may be staffed for hours and even days. Serious consideration for options on a modern MCC includes slide outs, awnings, emergency power supply and lighting, satellite

³⁵ City of Regina Master Emergency Response Plan 2019-2024, p.6.

dish for communications, video cameras for security or monitoring the incident, washroom, kitchenette, and outside works stations.

It is recommended that the 1952 GMC Mobile Command Centre vehicle be replaced in the next 12-18 months. A new MCC would have an approximate cost of \$800,000-\$1,000,000.

The City of Regina has mutual aid agreements with several surrounding communities and there is an expectation that the City of Regina will provide the necessary resources to help during a disaster. A more regional response capacity is more of the norm today and there may be some opportunities for provincial or federal funding in the purchase of a new or used MCC. The potential for funding should be explored by EPBC staff.

Emergency Operations Centre

The EOC is located on 4th Avenue with a backup generator and the secondary location is at Regina Police Station. The EOC has been utilized on several occasions but there has been no training exercises or testing conducted at the secondary site.

Tabletop exercises should be held in the secondary EOC location so staff can get familiar with quickly setting up the EOC and testing internet and WIFI capabilities. The set-up of the primary and secondary EOC locations should be quick and efficient and this can only happen by conducting training sessions.

It was noted during the writing of this FMP that the RPS is planning for the construction of a new station. It would be prudent for EPBC to have discussions with RPS on the feasibility of having the primary EOC located in the new police station.

6.2.5 Emergency Planning Training and Exercises

Emergency planning and ICS are like other skills; if you do not continuous practice them, you become rusty. Several training options will be identified to assist the EPBC to plan and exercise in ICS and existing emergency plans.

Discussion-Based - In discussion-based exercises, the primary intent is to have dialogue regarding the emergency plan, procedures, bylaws, and any policies that could impact an emergency. The discussion sessions are low key, low pressure and a great tool for familiarization of plans, procedures, bylaws, and policies. The secondary intent of discussion-based exercises is to build confidence through familiarization amongst team players in the application of the plan.

Discussion-based training is a great way to orientate new staff or existing staff that have not had an opportunity to familiarize themselves with the emergency plan or organizational plans, bylaws, procedures and policies and procedures.

Tabletop Exercise - Low cost, minimal stress, but preparation can require several weeks to create a scenario that is relevant to the City of Regina. The benefits of a tabletop exercise are that they can be led by one facilitator depending upon the complexity of the scenario. Tabletop exercises are great ways to identify some gaps in plans, policies, and procedures. After completion of the tabletop, it is critical that an After-Action Report is completed to identify any shortcomings or deficiencies.

Operations-Based - In operations-based exercises, the primary intent is to actually deploy the necessary personnel and equipment in a full-scale exercise or small drill. The disadvantage of operations-based exercises is that they require a significant amount of time to plan and prepare for as resources will be required, and they generally include multiple agencies.

Operations-based exercises are excellent in revealing gaps and weaknesses in training, inter-agency communications, resource allocation and operational procedures. Different types of operations-based exercises are detailed in Appendix I.

EPBC continues to be involved with key partners in the planning and preparing for emergencies. With the declaration of a pandemic by the World Health Organization (WHO) in March 2020, municipalities across Canada are discovering how important relationships and partnerships are in the time of a significant emergency.

Due to the importance of training staff in Incident Command and Emergency Centre Operations, EMT recommends that an Emergency Preparedness Specialist be hired that can provide and coordinator Incident Command and Emergency Operations Centre training along with business continuity planning for the City of Regina.

Note: *A more in-depth Community Risk Assessment support document has been supplied to RFPS in a stand-alone format. This was done because there is confidential information in the document.*

SECTION 7: Finance, Budgeting, and Capital Forecast Plan

The Regina Fire & Protective Services has a set of annual operating and capital budget/ forecasts that fluctuate based on the staffing, programs, and equipment that have been identified for replacement.

During the review of the operating and capital budget process, it was found that Regina Fire & Protective Services is well organized in both areas. This indicates a strong level of support by Council in relation to assisting the Fire Department in meeting its service goals.

7.1 Operating Budgets

During the review of the operating budget, it was found that all key account operating sections are identified and tracked, such as:

Operating Budget Line Items

- Staffing related costs
- Training
- Fire Prevention and related Fire Safety Education
- Vehicle and equipment maintenance
- Station maintenance

7.2 Capital Forecasts

It appears there is a standard year replacement cycle for the fire trucks that is based on the FUS recommendations for frontline vehicles. This replacement cycle falls in line with the industry standards of 20 years or more, depending on the vehicle's function. As such, Regina and its Fire Department should be commended for its efforts in endeavoring to adhere to this industry standard.

Capital Budget Line Items:

- Vehicle replacement
- Equipment replacement (for large cost items that are not covered in the operating budget)

Along with the replacement schedule, FUS recommends that there should be at least one spare fire truck for up to every eight related units. For example:

- One Engine/Pumper truck for every eight Engines/Pumpers,
- One spare aerial truck for every eight aerials,
- One spare tanker truck for every eight tankers, etc.

A reserve unit should always be available, should one of the primary units go out of service. This still applies if the department has less than eight vehicles. Although RFPS meets this FUS recommendation, RFPS does not have another full-time fire department in the area that has the capacity to support Regina during a large-scale situation. RFPS does maintain reserve vehicles and this becomes more important as the closest full-time career department is Moose Jaw, approximately 45 minutes' drive. As noted earlier, RFPS has fire service agreements with many municipalities; a good practice would be to have a list of fire apparatus maintained by those municipalities.

The Fire Chief, working with the Director of Finance, should ensure adequate reserve funds for apparatus and equipment. It is important to ensure that adequate annual contributions for apparatus, apparatus repairs, small equipment, and contributions for future infrastructure (fire stations) are identified. If any shortfalls are determined, the Fire Chief should establish what effect this will have on operations and bring forward any recommendations (for funding adjustments), if necessary.

Noted in the internal surveys, there is concern with RFPS staff using their personal vehicles for work duties. The Fire Chief should continue to work with the Director of Finance to have a fleet of vehicles available for staff so personal vehicles do not have to be used for City business.

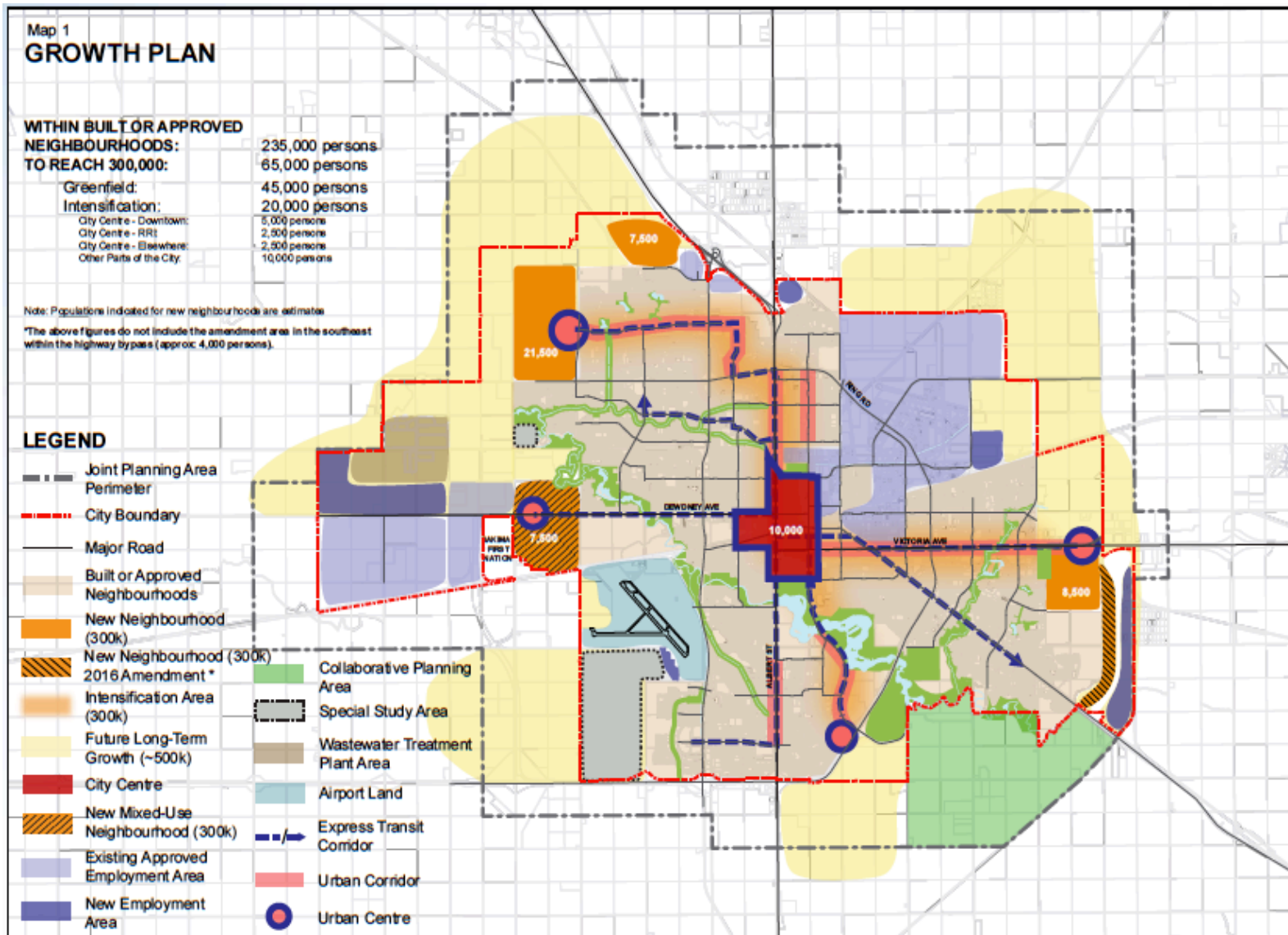
SECTION 8: Recommendations for Future Fire Service Enhancements

This section has been provided to offer Regina a more focused opportunity to review options for future fire service protection initiatives for the community. These options revolve around the building of new fire stations based on the projected growth of the City.

The City of Regina is forecasting an estimated growth of between 50,000 and 100,000 people over the next 25 years. While it is estimated 10,000 people will be added to the downtown core through intensification of the core density, much of the new growth is slated for new subdivisions. Planning documents show development for an additional 50,000 people with some of the subdivisions already in the beginning steps. To prepare for this growth, RFPS will need to identify future fire station locations and staffing needs.

Based on the information received in meetings with City staff, along with the growth projection map (Figure 2a), EMT has put recommended a four-phase long-term fire station expansion to assist the Department in meeting the anticipated growth.

FIGURE #2a: Growth Plan

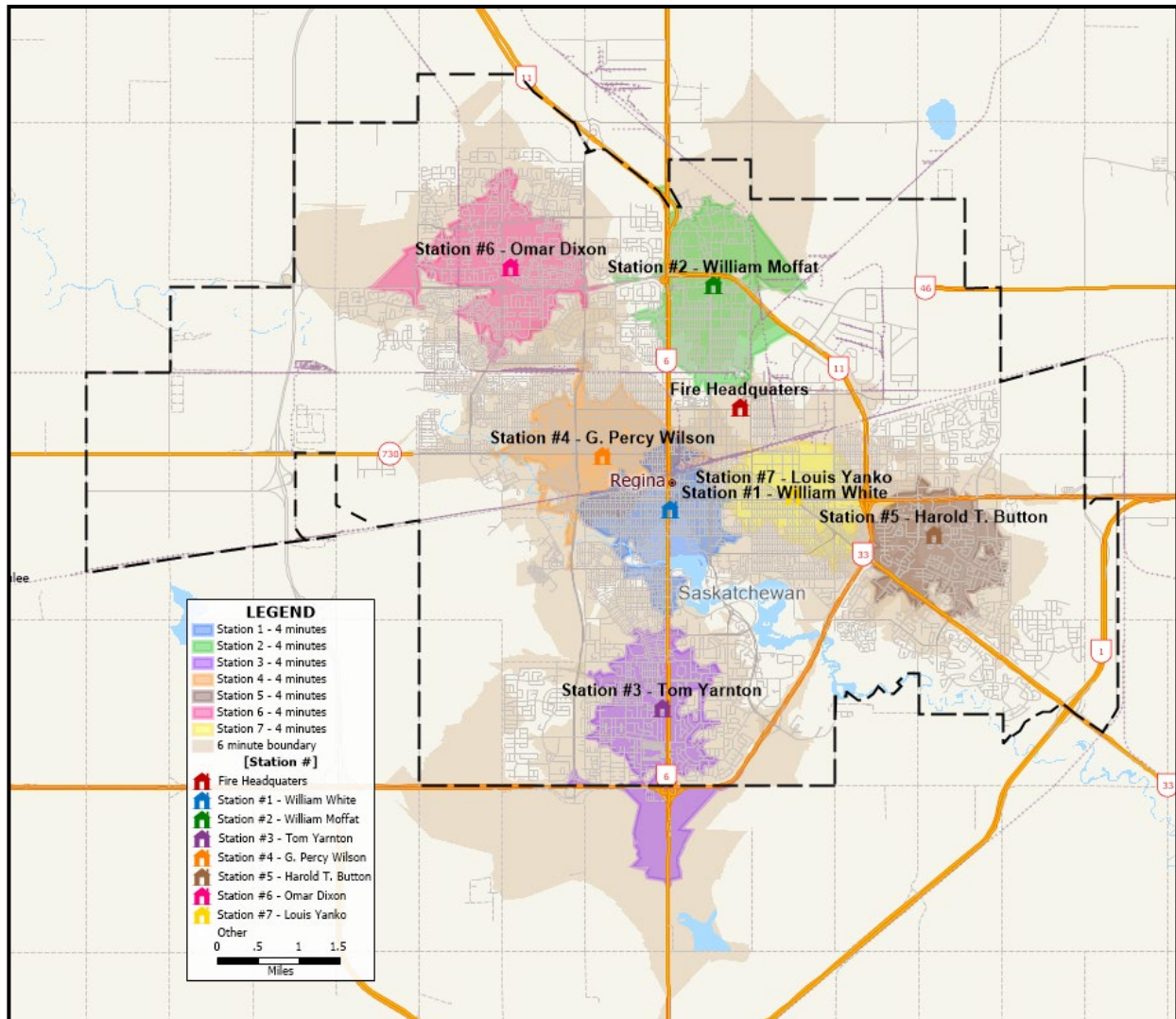


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8.1 Response Goals

As previously noted, RFPS is an Accredited Agency. As such, it has a set response time benchmark of being on scene with the first unit in 6-minutes and 10-seconds. The current 90th percentile for structure fires is 6 minutes 31 seconds. For the most part, RFPS is meeting this response time goal and should be recognized and commended for effort.

FIGURE #4b: RFPS Stations – 4- and 6-Minute Drive-Time Zones



As can be seen in the map, between the 4-minute coloured response areas and the 6-minute (beige) shaded areas, much of the City is covered, however, there remains some sections of the City that fall outside of these two areas.

Considering the response zones and the information supplied by the City relating to anticipated future growth (Growth Map), EMT is recommending four mid- to long-term options for the locations of fire stations.

Note: EMT has supplied suggested locations for the fire stations in the following maps. The actual station locations will, however, depend on the availability of City owned land and/ or land available for purchase by the City.

8.1.1 Fire Station Expansion - Phase #1 (Station 8)

Due to the existing residential and commercial development and future expected expansion between the Greens on Gardiner and Bypass adjacent to Highway 33 a new fire station would be able to more effectively cover that part of the City where new subdivisions are being added to accommodate an additional 8,500 people. EMT is proposing two potential locations for Station 8 to provide support services for the surrounding fire stations that are already in place. As the population grows, Station #5 will require support in the noted area.

Option A: Chuka Boulevard & Green Apple Drive. Land available to facilitate a fire station and provides a quick access to Arcola Avenue and addresses response time gaps from Station 5.

Option B: Primrose Green Drive & Chuka Boulevard. This station location is appealing as land is available and Chuka Boulevard will be expanded north to Victoria Avenue, which provides this station a quick response within its district and an option to drive North on Chuka Boulevard to Victoria Avenue East to assist Stations 5 and 7.

Staffing Requirements – Phase #1

Based on the addition of a new fire station, the standard staffing increase would be 20 new firefighters for one fire truck.

A new fire truck would be required for the new Station 8.

Timeline

Short-term (1-5 years)

FIGURE #14a: Fire Station Expansion - Phase #1 – Addition of Station 8 (Option A – Chuka Boulevard & Green Apple Drive)

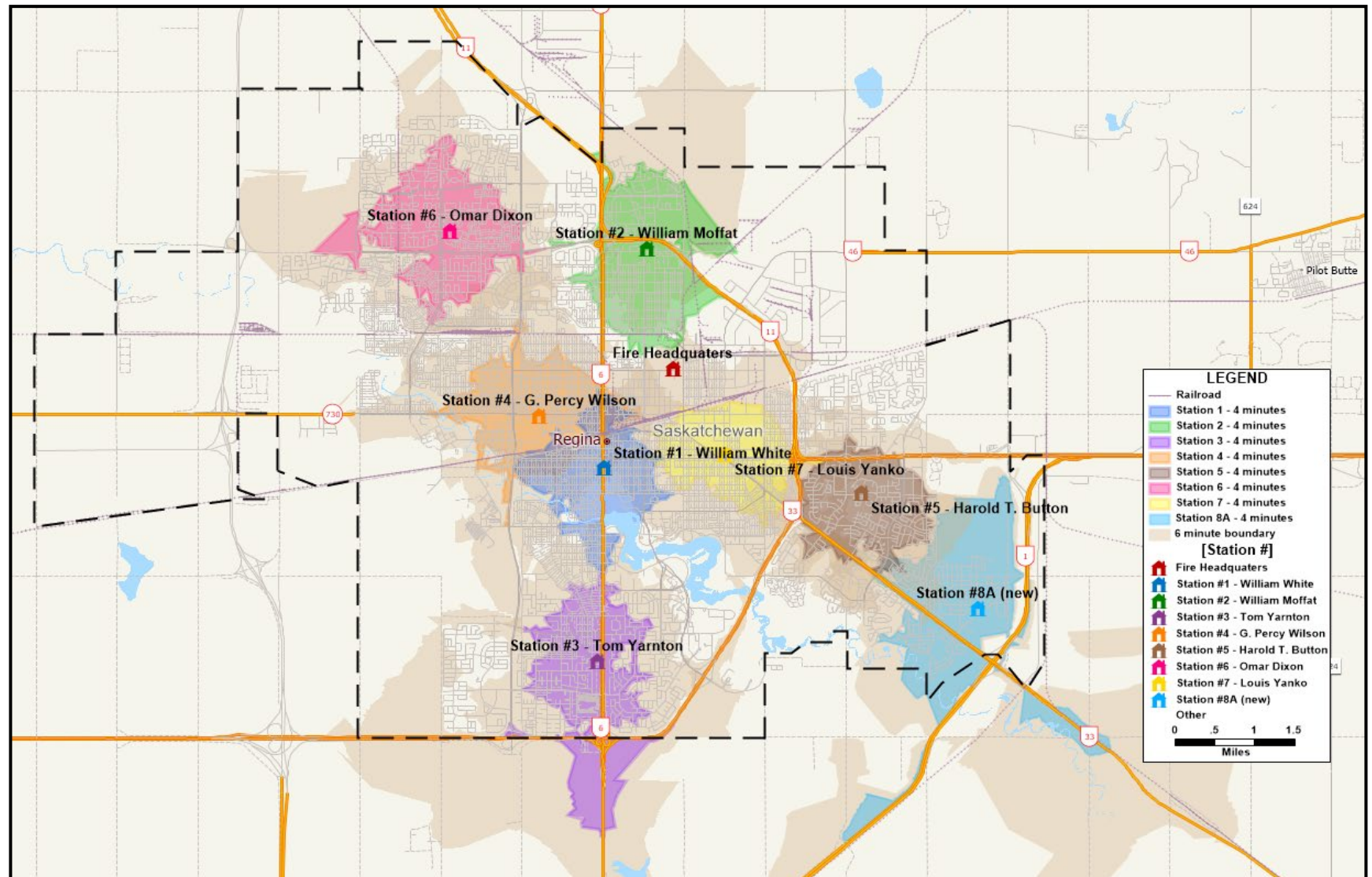
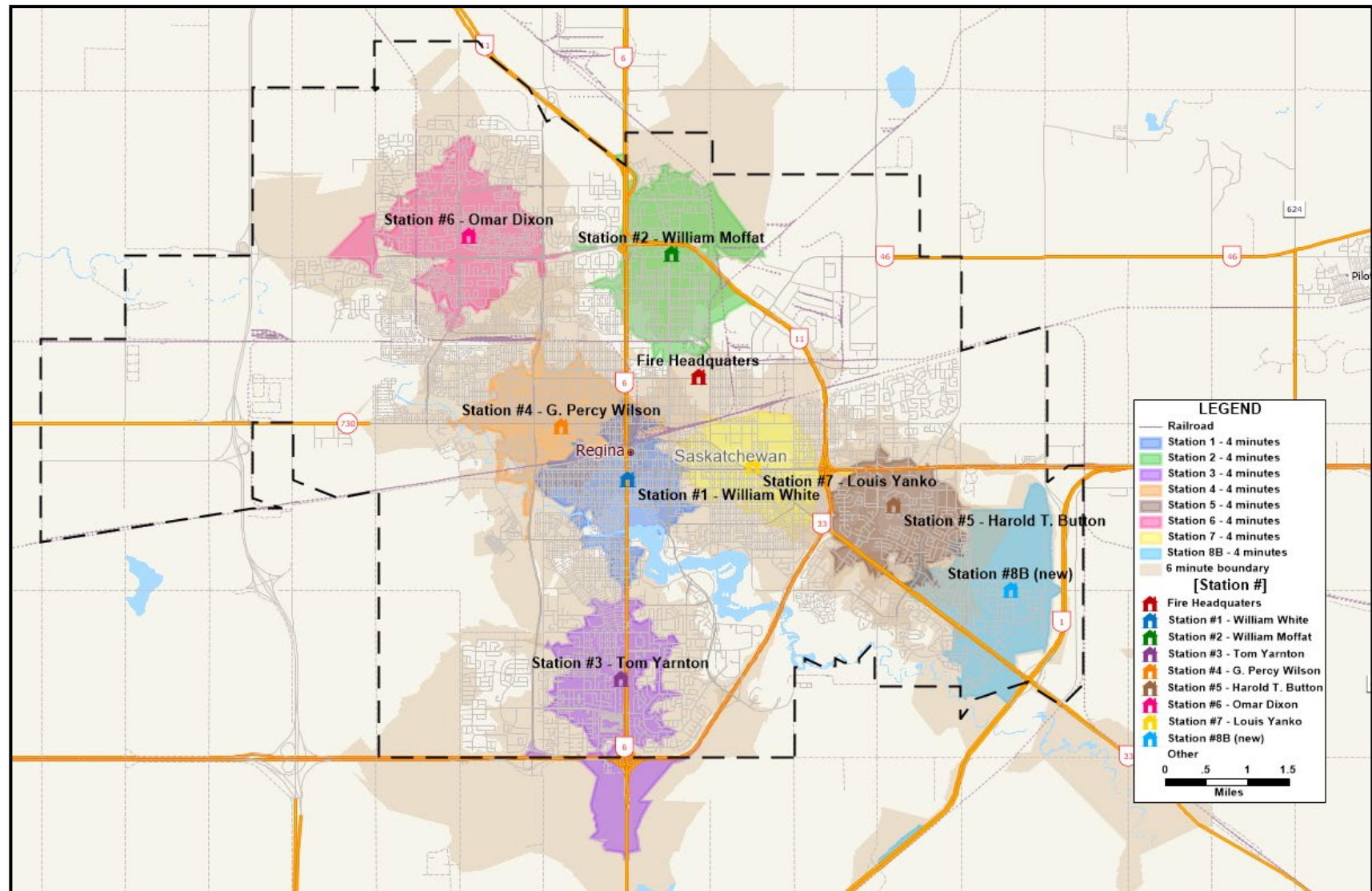


FIGURE #14b: Fire Station Expansion - Phase #1 – Addition of Station 8 (Option B – Primrose Green Drive & Chuka Boulevard)



8.1.2 Fire Station Expansion - Phase #2 (Station 9)

Due to the anticipated development of two new neighbourhoods between 25th Avenue and the Regina Airport and West of Harbour Landing, EMT is recommending Station 9 be located in this vicinity to provide coverage as Station 3 cannot meet the standard 4-minute travel time to Harbour Landing or the Airport.

Option A: Campbell Street at the Airport – An option is to explore a partnership with the Regina Airport Authority to share the airport fire station with Airport Firefighters. Presently, RFPS already responds to the Airport for calls that are not on “air side” and by entering into a joint partnership, this would accomplish two things; a quicker response to calls on airport property and an increase in coverage area to the south-western part of the City. The added benefit for the Regina Airport Authority is that RFPS will station a Tanker at this location and therefore providing the much-needed water supply for Regina Airport fire suppression services.

Option B: Campbell Street & 25th Avenue. An alternate location for Station 9 is at Campbell Street & 25th Avenue. This proposed location provides immediate response to Harbour Landing which is not currently meeting industry best practices of 4 minutes by RFPS and addresses the travel time gaps from Station 3. Commencement of the Harbour Landing development is likely 2022 including a new school as a priority.

Staffing Requirements – Phase #2

Based on the addition of a new fire station, the standard staffing increase would be 20 new firefighters for one fire truck.

A new fire truck would be required for the new Station 9

A partnership with the Regina Airport Authority may see the cost of a station dramatically reduced. Costs may be limited to renovations or a small addition to the current airport fire hall. If an agreement with the airport authority is unable to be established, a new fire station would also be required.

Timeline

Mid-term (5-10 years)

FIGURE #14c: Fire Station Enhancements - Phase #2 Addition of Station 9A

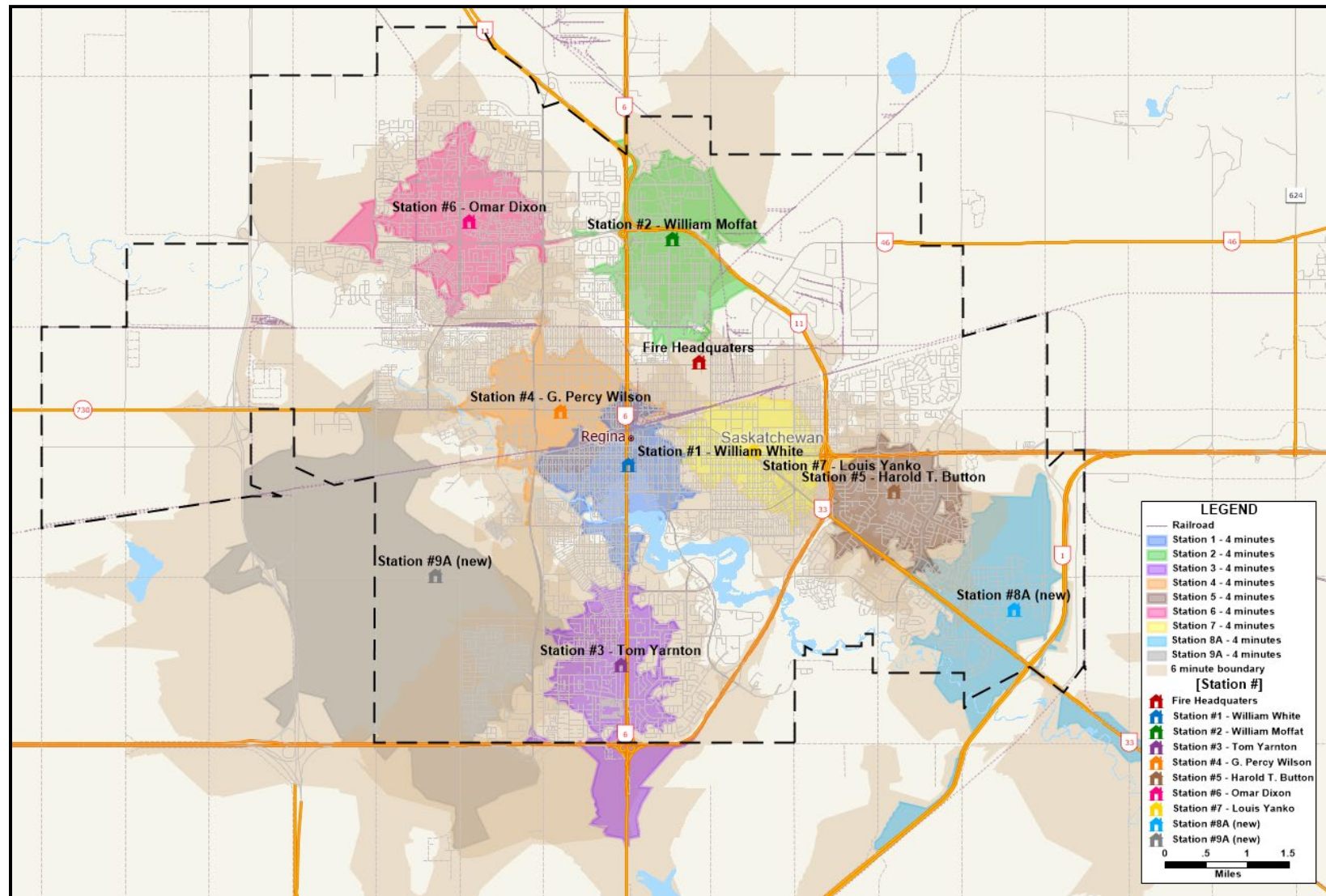
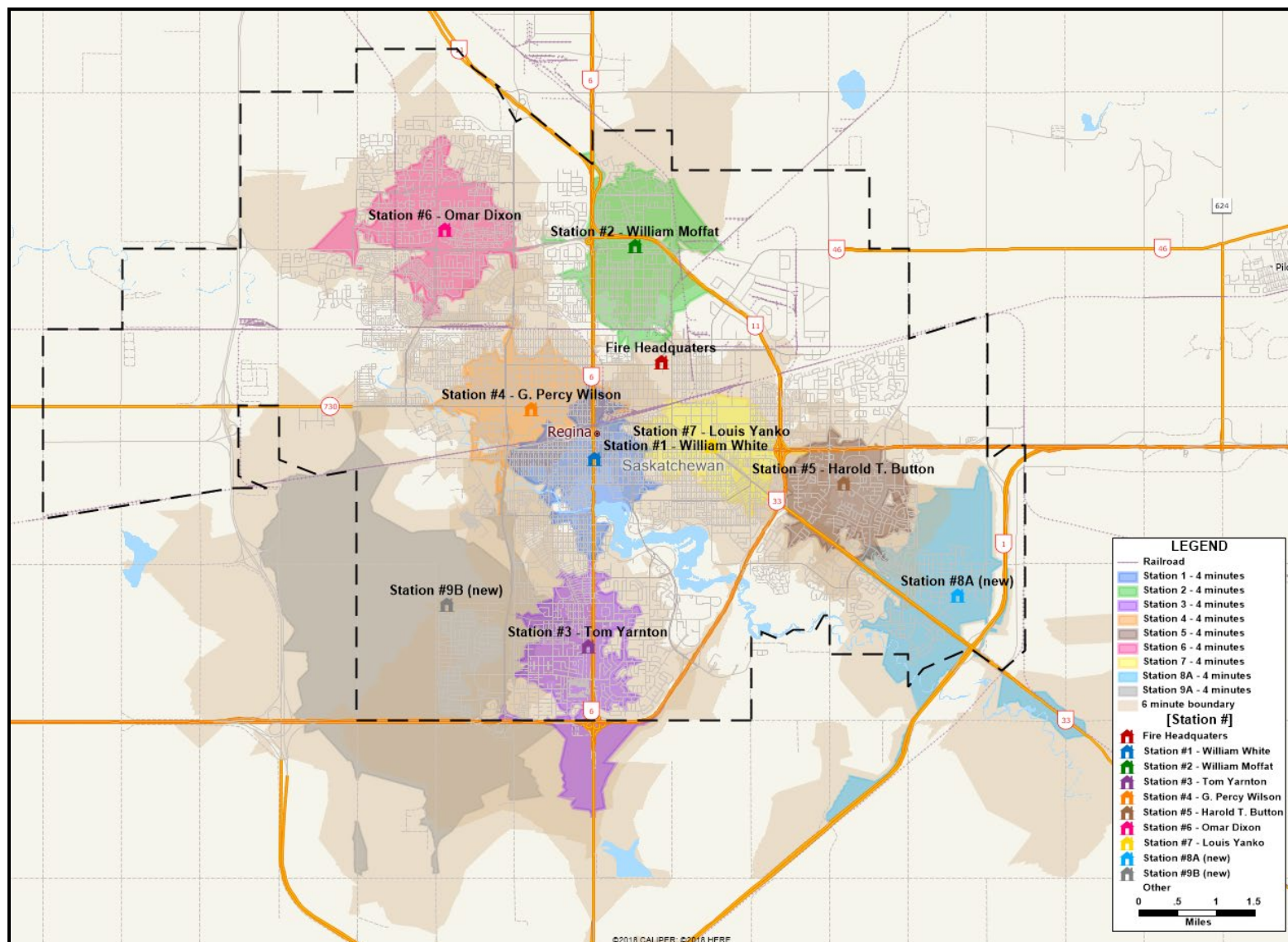


FIGURE #14d: Fire Station Enhancements - Phase #2 Addition of Station 9B



8.1.3 Fire Station Expansion - Phase #3 (Station 10)

Phase 3 is to build a new fire station in the northeast area of the City as noted in the following map in the vicinity of Prince of Wales Drive & 7th Avenue East. This location is beneficial as it addresses the existing response gap and provides RFPS quick access on 7th Avenue East to address Glencairn incidents and access to Prince of Wales Drive to Victoria Avenue. This station location can also access the commercial and industrial sector.

Staffing Requirements – Phase 3

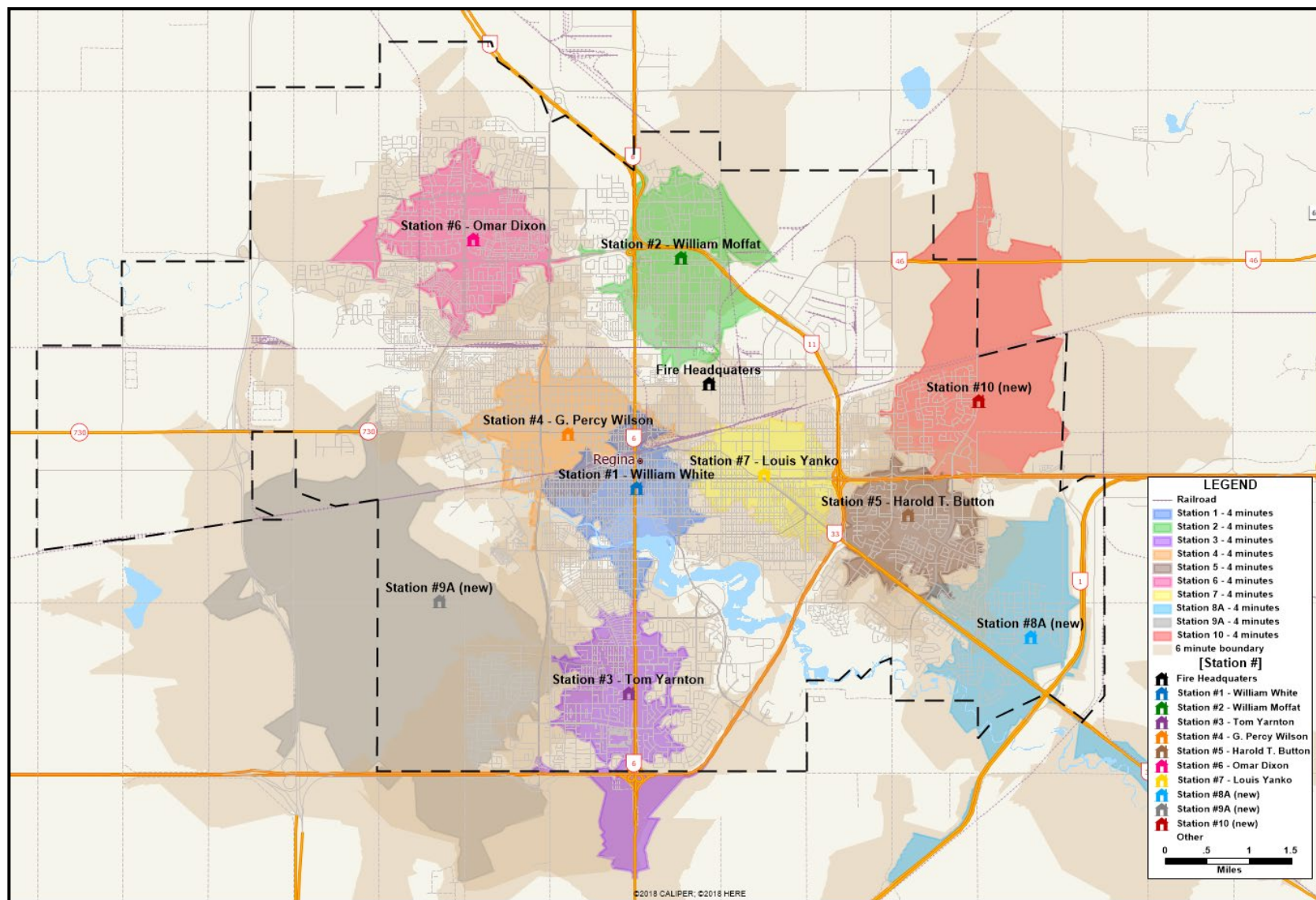
Based on the addition of a new fire station, the standard staffing increase would be 20 new firefighters.

If a new fire truck is added to the station, additional funding should be included in the budget.

Timeline

Long-term (10-15 years)

FIGURE #14e: Fire Station Enhancements - Phase #3 – Addition of Station 10



8.1.4 Fire Station Expansion - Phase #4 (relocate Station 6)

The fourth phase is to build a new fire station in the northwest area of the City as noted in the following map to replace Station 6. Station 6 was constructed in 1979 and therefore it is prudent to start the planning for its replacement, which we have identified at 15-20 years out. The Station would be located closer to where significant development is planned. This Station relocation should be closely timed to Phase #5 to cover the movement of the station west.

The new fire station would be able to more effectively cover that part of the City, where new subdivisions are being added to accommodate an additional 30,000 people.

Staffing Requirements – Phase # 4

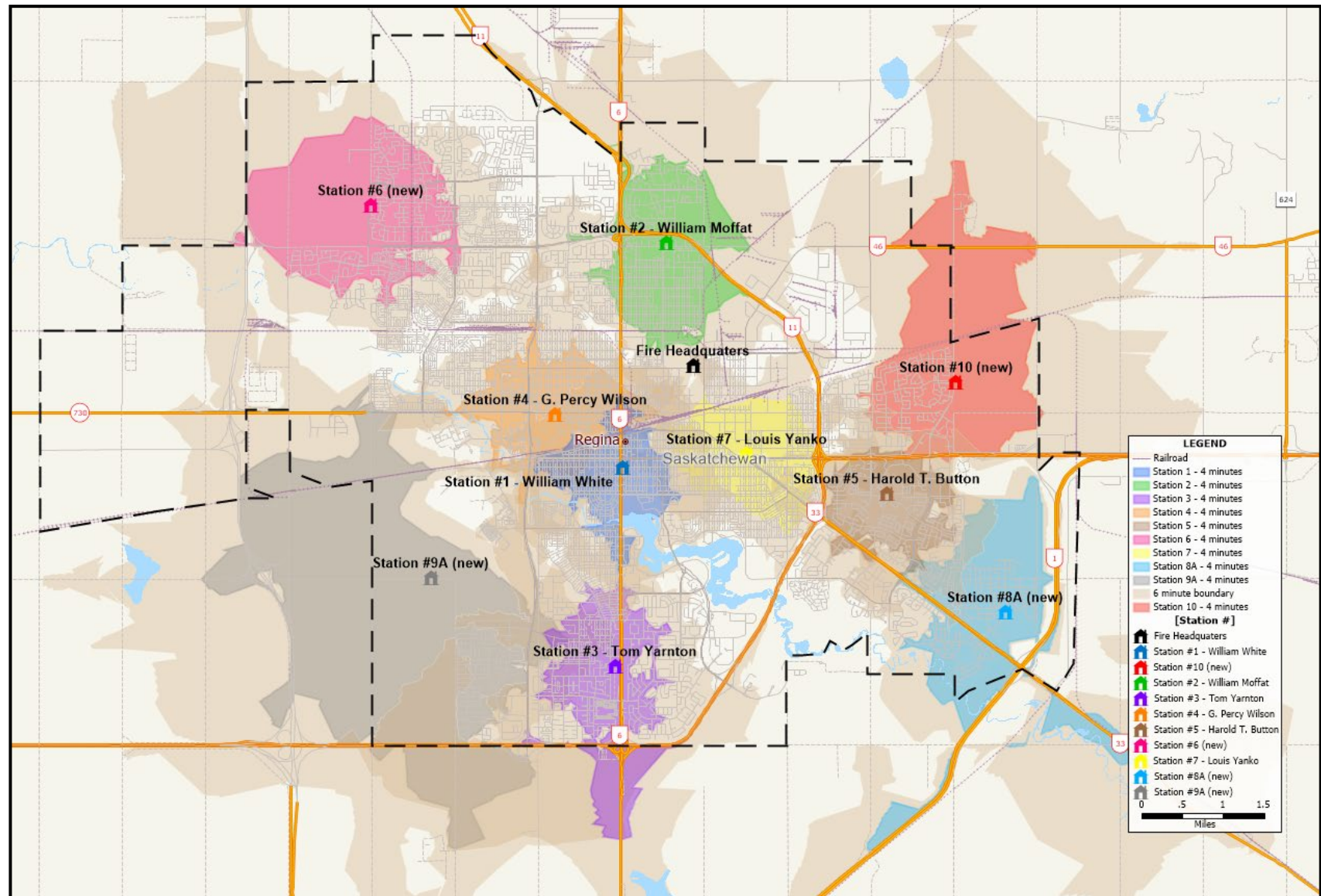
In this phase the firefighters from Station 6 would be moved to their new location so there would not be any additional staffing or apparatus costs.

If a new fire truck is added to the station, additional funding should be included in the budget.

Timeline

Long-term (15-20 years)

FIGURE #14f: Fire Station Enhancements - Phase #4 Map – Relocation of Station 6



8.1.5 Fire Station Expansion - Phase # 5 (Station 11)

RFPS should investigate the feasibility of a partnership with the RM of Sherwood where a capital investment is provided by the RM of Sherwood for a station staffed by RFPS to quickly respond to the RM of Sherwood as well as the north west of the city. The Pasqua Street & Diefenbaker Drive station provides good access to the GTH and Highway 11.

This phase should be closely times with Phase 4, the relocation of Station 6 in order to minimize the gap between the new Station 6 and Station 2.

Staffing Requirements – Phase # 5

Based on the addition of a new fire station, the standard staffing increase would be 20 new firefighters.

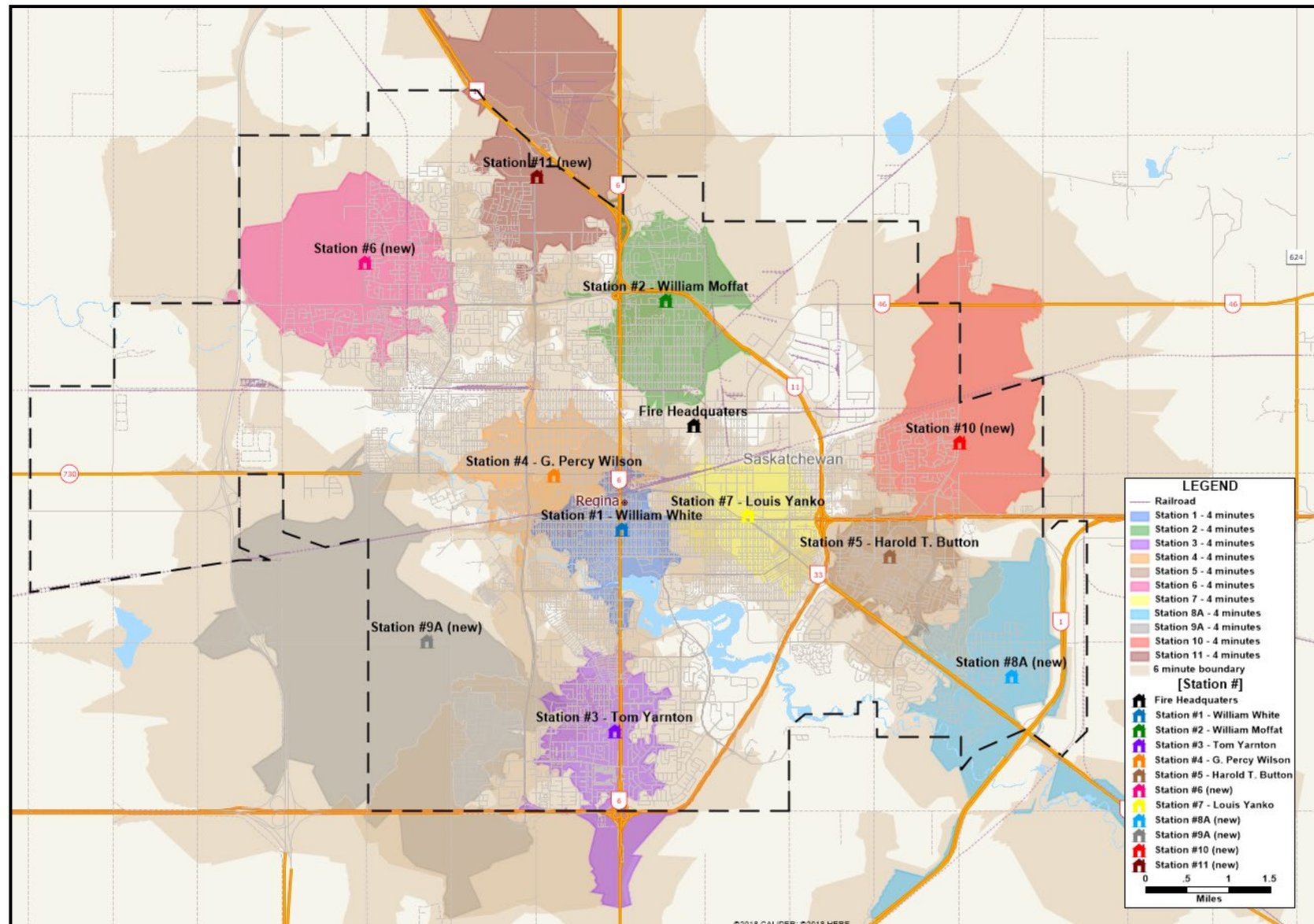
The cost of building the new station could be the responsibility of the RM of Sherwood.

A new fire truck would be required for the new Station 11.

Timeline

Long-term (15-20 years)

FIGURE #14g: Fire Station Enhancements - Phase #5 Map – Addition of Station 11



8.1.6 Fire Station Expansion - Phase # 6 – Station 12

The sixth phase is a very long-term addition to the fire service 20-25 years out. A new station would be located in the vicinity of McCarthy Boulevard & 4th Avenue to cover the areas between Station 2, 4, 6 and 11. It also provides coverage for the anticipated development west along Dewdney Avenue as well as enhanced response to the Global Transportation Hub.

Staffing Requirements – Phase # 6

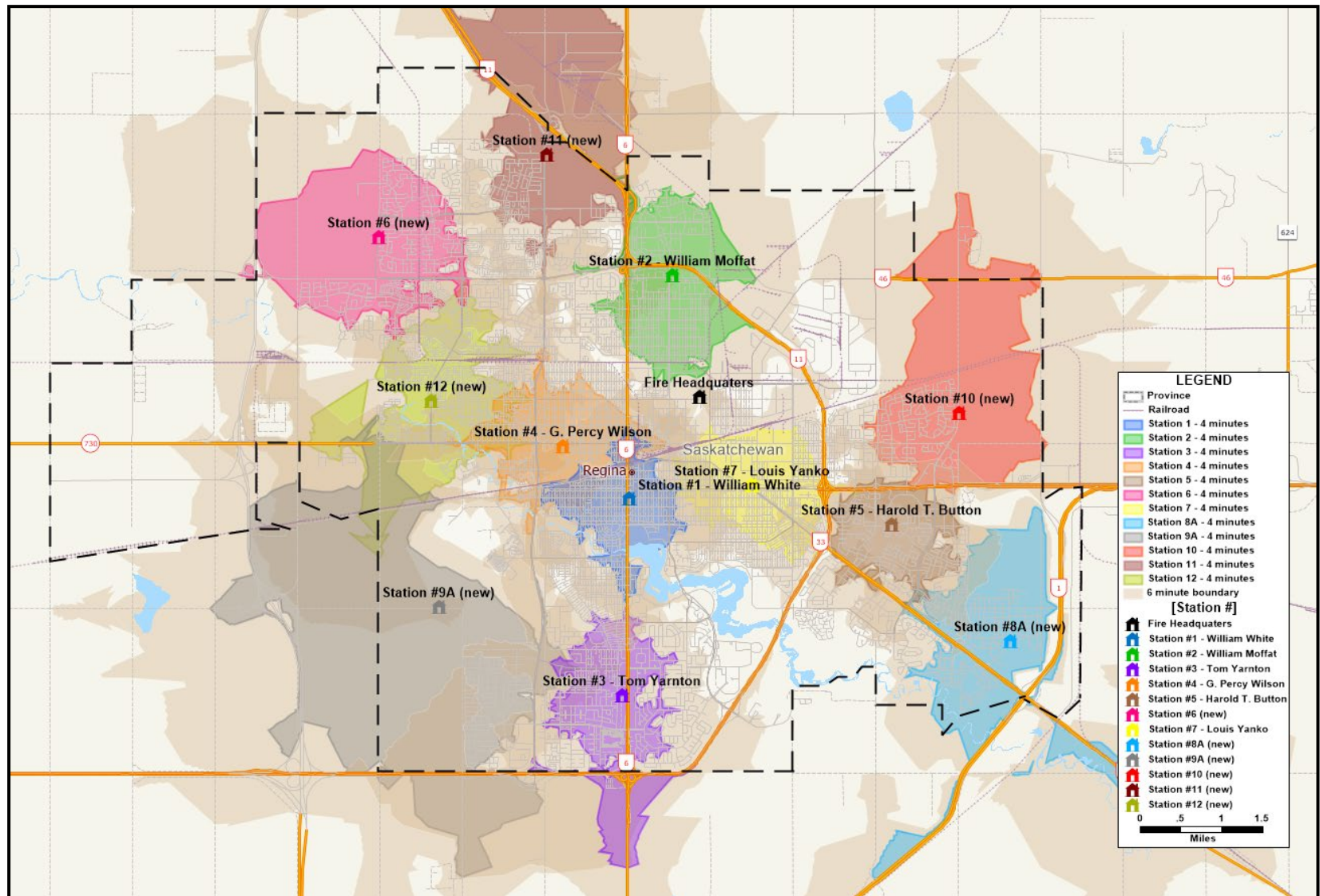
Based on the addition of a new fire station, the standard staffing increase would be 20 new firefighters.

A new fire truck would be required for the new Station 11.

Timeline

Long-term (20-25 years)

FIGURE #14h: Fire Station Enhancements - Phase #6 Map – Addition of Station 12



8.1.7 Summary

It should be noted that the timeline for the phases may vary with increased or decreased growth projections and development timelines. The long-term vision is to maintain a growth of the fire department consistent with the growth and demands of the community.

The total anticipated cost if all five fire stations are built, and the Airport option is not used:

Five new fire stations, including rebuilding Station 6, would cost approximately \$12.5 to \$15 million to build over a period of 20-25 years (based on the RM of Sherwood being responsible for the costs of proposed Station 11. Section 8.2 discusses options for fire stations including multi-purpose buildings and leasing.

Apparatus for five of the fire stations would cost approximately \$3.2-\$4 million

Staffing for the five fire stations would be estimated at a \$2.5 million increase every 5 years for a total of \$12.5 million spread out over 20-25 years.

8.2 Type of Buildings and Options for Fire Stations

A traditional emergency response station has often been a stand-alone fire station. Municipalities have been moving towards integrating municipal services into shared use buildings with emergency service response stations being built into community centres, libraries, public works buildings, etc.

It is common across Canada to have different emergency services co-located in the same building whether that be fire/police, fire/paramedics, or all three in the same building. These stations normally have separate quarters within the same building, with separate entrances and facilities. This permits each service to operate independently at the same time as taking advantage of the efficiencies of a single structure.

Municipalities are looking for opportunities to create more efficient use of space and financial resources and integrate municipal services within the community. There are several models that are being used in different jurisdictions including public private partnerships, partnerships with non-profit organizations, and leasing of available commercial space.

As technology, community demographics, and operational requirements change, maintaining an ability to be flexible in the station design, construction, and even location, will benefit the community in the long-term.

Leasing reduces the initial capital outlay, places building maintenance responsibility on the landlord, and allows the City the flexibility to move should there be a change in community development.

The following is the new City of Vancouver Fire Station #5 that is being integrated into a community housing project run by the YWCA. The two floors make up the fire station with the upper four floors of the six-storey building providing 31 affordable housing units for single mothers and their children. While the fire station was funded by the City, the YWCA housing receive funding from the City, Province, and Federal governments as well as the YWCA who launched a capital fund raising campaign. Having the two services integrated provides a sense of safety and security for the single mothers and their children.



In Calgary, plans are underway to build a multi-use building (*pictured on the right*) that includes an affordable housing tower, a market condo tower, office and retail complex, along with a fire station and paramedic station (paramedic services are operated by the province in Alberta). This is a public private partnership.



In Montreal a fire station (*pictured below*) is built into the ground floor of the Palais des Congress de Montreal, a convention centre that includes a transit hub and retail space. This was a public private project including the city and the province.



The City of Barrie has leased the end unit of a commercial strip mall as a fire station (*pictured below*). The unit was constructed by the landlord to meet the City's requirements. Having a leased unit give the City the flexibility to move/relocate the station should there be a change in the community development.



SECTION 9: Summary

9.1 Conclusion

RFPS staff are truly dedicated to the community they serve. During our review, it was clear that Council, the Executive Leadership Team, and Fire Chief are sincerely committed to ensuring the safety of the community and the firefighters. Based on the present staffing, equipment, and fire stations locations, RFPS is endeavoring to offer the most efficient and effective service possible. There is always room for improvement, however, and it is hoped that the recommendations made by Emergency Management and Training Inc. will assist RFPS in meeting its goals.

All costs and associated timelines are approximate estimates that can be implemented through prioritization between the Fire Chief, the City Manager, and Council.

This Plan is a long-range planning document; however, it is recommended that annual updates be completed, along with a full review to be conducted at the five-year mark.

SECTION 10: Appendices

Appendix A: Definitions and References

Automatic Aid Agreements

For the purposes of this report, an automatic aid agreement means any agreement under which,

- a) a municipality agrees to ensure the provision of an initial response to fires, rescues and emergencies that may occur in a part of another municipality where a Fire Department in the municipality is capable of responding more quickly than any Fire Department situated in the other municipality; or
- b) a municipality agrees to ensure the provision of a supplemental response to fires, rescues and emergencies that may occur in a part of another municipality where a Fire Department situated in the municipality is capable of providing the quickest supplemental response to fires, rescues and emergencies occurring in the part of the other municipality.
 - *Automatic aid is generally considered in other jurisdictions as a program designed to provide and/or receive assistance from the closest available resource, irrespective of municipal boundaries, on a day-to-day basis.*

CFAI - Community Definitions

- Suburban – an incorporated or unincorporated area with a total population of 10,000 to 29,999 and/or any area with a population density of 1,000 to 2,000 people per square mile
- Rural – an incorporated or unincorporated area with a total population of 10,000 people, or with a population density of less than 1,000 people per square mile.

NFPA Documents

- NFPA 1002 – Standard for Fire Apparatus Driver/ Operator Professional Qualifications
- NFPA 1021 – Standard for Fire Officer Professional Qualifications
- NFPA 1031 – Standard for Professional Qualifications for Fire Inspector and Plan Examiner
- NFPA 1033 – Standard for Professional Qualifications for Fire Investigator

- NFPA 1035 – Standard on Fire and Life Safety Educator, Public Information Officer, Youth Fire Setter Intervention Specialist and Youth Fire Setter Program Manager Professional Qualifications
- NFPA 1041 – Standard for Fire Service Instructor Professional Qualifications
- NFPA 1061 – Professional Qualifications for Public Safety Telecommunications Personnel
- NFPA 1072 – Standard for Hazardous Materials/ Weapons of Mass Destruction Emergency Response Personnel Professional Qualifications
- NFPA 1201 – Standard for Providing Fire and Emergency Services to the Public
- NFPA 1221 – Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems
- NFPA 1300-Standard on Community Risk Assessment and Community Risk Reduction Plan Development
- NFPA 1250-Recommended Practice in Fire and Emergency Service Organization Risk Management.
- NFPA 1408-*Standard for Training Fire Service Personnel in the Operation, Care, Use, and Maintenance of Thermal Imagers*
- NFPA 1500 – Standard on Fire Department Occupational Safety, Health, and Wellness Program
- NFPA 1521 – Standard for Fire Department Safety Officer Professional Qualifications
- 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
- NFPA 1730 – Standard on Organization and Deployment of Fire Prevention Inspection and Code Enforcement, Plan Review, Investigation, and Public Education Operations
- NFPA 1901 – Standard for Automotive Fire Apparatus
- NFPA 1911 – Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Emergency Vehicles

Mutual Aid

- a) Mutual aid plans allow a participating Fire Department to request assistance from a neighbouring Fire Department authorized to participate in a plan approved by the Fire Marshal.
- b) Mutual aid is not immediately available for areas that receive fire protection under an agreement. The municipality purchasing fire protection is

responsible for arranging an acceptable response for back-up fire protection services. In those cases where the emergency requirements exceed those available through the purchase agreement and the backup service provider, the mutual aid plan can be activated for the agreement area.

Appendix B: Deliverables

Based on the RFP produced by the City, the FMP shall include:

- A study of future staffing, equipment, and apparatus needs, spanning the next 25 years, for the City of Regina and for a future scenario that includes regionalization, including options and recommendations.
- The identification of new fire station locations or realignment of existing stations based on the OCP's growth projections for Regina.
- A review of response time models as well as service delivery and support services requirements, including options and recommendations.
- The use of fire protection technologies, fire and building regulations, and other deployment factors (traffic signal pre-emption, etc.) will be considered, including cost projections, to help mitigate the community's risk.
- A Stakeholder Summary, outlining the engagement of internal and external stakeholders.
- A projection of capital and operating costs for facilities, fleet, equipment and staffing for potential new stations and apparatus.
- A review of alternative models for staffing structure, including options and recommendations.

The Plan must also:

- Include an implementation plan in five-year increments.
- Follow the City of Regina Approach to Master Plans Corporate Guideline.
- Align with Design Regina: The OCP, the City of Regina Strategic Plan, RFPS Standards of Cover, the CFAI, and industry best practice.

Based on these criteria and through meetings with the Fire Chief, staff, City Council and other stakeholders, the consulting team was able to complete a thorough review, defining elements that are working well and areas requiring improvement within RFPS.

Through the review of the Fire Department's facilities, equipment, programs, and related data, EMT is submitting a total of 49 recommendations for consideration by the Fire Chief, senior management, and Council to guide RFPS into the future.

Appendix C: Next-Generation 9-1-1

In June of 2017, the Canadian Radio-television and Telecommunications Commission CRTC created regulations regarding the Next Generation Communications for 9-1-1 centres. The following is an excerpt from the CRTC website regarding the program and its benefits for enhancement to public safety communications. (Note: due to COVID19, CRTC has postponed the original delivery dates to a tentative date of 30 March 2024 and that remains under review)

Canadians depend on the provision of reliable and effective 9-1-1 services to seek help in an emergency. As technology and consumers' needs evolve, so do consumers' expectations related to 9-1-1 services. In the coming years, telecommunications networks across Canada, including the networks used to make 9-1-1 calls, will continue to transition to Internet Protocol (IP) technology. This will enable Canadians to access new, enhanced, and innovative 9-1-1 services with IP-based capabilities, referred to as next-generation 9-1-1 (NG 9-1-1) services. For example, Canadians could stream video from an emergency incident, send photos of accident damage or a fleeing suspect, or send personal medical information, including accessibility needs, which could greatly aid emergency responders.

In this decision, the Commission is setting out its determinations on the implementation and provision of NG 9-1-1 networks and services in Canada. This will require coordination and collaboration between numerous stakeholders, including the Commission; telecommunications service providers that provide 9-1-1 services (TSPs); 9-1-1 network providers; the CRTC Interconnection Steering Committee (CISC); federal, provincial, territorial, and municipal governments; emergency responders; and public safety answering points (PSAPs). As such, in this decision, the Commission is making a number of recommendations in which all stakeholders will have a role to play, including the establishment of a national PSAP and emergency responder coordinating body.

The Commission has determined that an incumbent local exchange carrier (ILEC) stewardship model under Commission oversight is the most appropriate with respect to the governance and funding of NG9-1-1, such that the ILECs will be responsible for the construction, operation, and maintenance of the NG9-1-1 networks, with Commission oversight, including through Commission approval of the ILECs' tariffs.

The Commission **directs** all ILECs to establish their NG9-1-1 networks and to be ready to provide NG9-1-1 Voice service by **30 March 2021** wherever PSAPs have been established in a particular region.

The Commission also **directs** all TSPs to make the necessary changes to support NG9-1-1 Voice throughout their operating territories by **30 March 2021** wherever (i) their networks are capable of doing so, and (ii) PSAPs have launched NG9-1-1 Voice. The Commission determines that real-time text (RTT)-based NG9-1-1 Text Messaging is the second method of communication to be supported on the NG9-1-1 networks. The Commission **directs** mobile wireless service providers to provide RTT-based NG9-1-1 Text Messaging throughout their operating territories by **30 March 2022** wherever (i) their networks are capable of doing so, and (ii) PSAPs have launched NG9-1-1 Text Messaging. The Commission also requests that CISC submit to the Commission, for information, its recommended public education campaign for each new NG9-1-1 service.

During the transition to NG9-1-1, ILECs are **directed** to support existing 9-1-1 voice services over the existing 9-1-1 networks in parallel with the new NG9-1-1 networks. As well, ILECs are to decommission their current 9-1-1 network components that will not form part of their NG9-1-1 networks by **30 March 2024**. The existing 9-1-1 tariff rate regime for funding the current 9-1-1 networks will remain in place during the transition, along with new incremental tariffed rates that will be established for NG9-1-1. These rates will be in effect until current 9-1-1 networks are decommissioned, at which time final NG9-1-1 network access tariff rates will be established.

Finally, the Commission is imposing obligations related to (i) ensuring the reliability, resiliency, and security of the NG9-1-1 networks; (ii) reporting on NG9-1-1 network outages; and (iii) ensuring privacy in an NG9-1-1 environment.

Goals and Outcomes of Implementation

1. *Effective and timely access to emergency services in Canada is critical to the health and safety of Canadians and is an important part of ensuring that Canadians have access to a world-class communication system.*
2. *Canadians currently have access to either Basic 9-1-1 or Enhanced 9-1-1 service through wireline, wireless, and voice over Internet Protocol (VoIP) telephone services wherever a 9-1-1 call centre, also known as a*

public safety answering point (PSAP), has been established. Canadians in areas where a PSAP has not yet been established are typically required to dial seven- or ten-digit telephone numbers to seek emergency services from responders such as police, fire, or ambulance.

- 3. In the coming years, telecommunications networks across Canada, including the networks used to make 9-1-1 calls will continue to transition to IP technology. This transition will have a major impact on the networks, systems, and arrangements used to provide 9-1-1 services, and will be a complex and costly undertaking that will occur gradually over a number of years.*
- 4. In paragraph 7 of Telecom Regulatory Policy [2014-342](#), the Commission indicated that Canadians should have access to new, enhanced, and innovative 9-1-1 services with IP-based capabilities, otherwise referred to as next-generation 9-1-1 (NG9-1-1) services. As such, the Commission announced its intention to conduct a comprehensive examination of NG9-1-1 in order to establish an NG9-1-1 regulatory framework.*
- 5. With NG9-1-1, Canadians in need of emergency services could ultimately send a text message or transmit photos, videos, and other types of data to 9-1-1 operators, in addition to making traditional voice 9-1-1 calls using wireline, wireless, or VoIP telephone services. For example, they could stream video from an emergency incident, send photos of accident damage or a fleeing suspect, or send personal medical information, which could greatly aid emergency responders.³⁷*

³⁷ <https://crtc.gc.ca/eng/archive/2017/2017-182.htm>

Appendix D: Five-Step Staffing Process

Step 1: Scope of Service, Duties, and Desired Outputs

Identify the services and duties that are performed within the scope of the organization. Outputs should be specific, measurable, reproducible, and time limited. Among the elements can be the following:

- Administration
- Data collection, analysis
- Delivery
- Authority/responsibility
- Roles and responsibilities
- Local variables
- Budgetary considerations
- Impact of risk assessment

Step 2: Time Demand

Using the worksheets in Table C.2.2(a)-(d), quantify the time necessary to develop, deliver, and evaluate the various services and duties identified in Step 1, taking into account the following:

- Local nuances
- Resources that affect personnel needs

Plan Review – Refer to Plan Review Services Table A.7.9.2 of the standard to determine Time Demand.

Step 3: Required Personnel Hours

Based on Step 2 and historical performance data, convert the demand for services to annual personnel hours required for each program [see Table C.2.3(a) through Table C.2.3(e)]. Add any necessary and identifiable time not already included in the total performance data, including the following:

- Development/preparation
- Service
- Evaluation^[SEP]
- Commute
- Prioritization

Step 4: Personnel Availability and Adjustment Factor

Average personnel availability should be calculated, taking into account the following:

- Holiday

- Jury duty
- Military leave
- Annual leave/vacation
- Training
- Sick leave
- Fatigue/delays/other

Example: Average personnel availability is calculated for holiday, annual, and sick leave per personnel member (see Table C.2.4).

Step 5: Calculate Total Personnel Required

Branch of the unassigned personnel hours by the adjustment factor will determine the amount of personnel (persons/year) required. Any fractional values can be rounded up or down to the next integer value. Rounding up provides potential reserve capacity; rounding down means potential overtime or assignment of additional services conducted by personnel. (Personnel can include personnel from other agencies within the entity, community, private companies, or volunteer organizations.)

Correct calculations based on the following:

- (1) Budgetary validation
- (2) Rounding up/down
- (3) Determining reserve capacity
- (4) Impact of non-personnel resources (materials, equipment, vehicles) on personnel

More information on this staffing equation can be found within the NFPA 1730 standard. The Fire Prevention should assess the previous five steps and evaluate their present level of activity and the future goals of the Branches.

Appendix E: NFPA 1710 Initial Full Alarm Responses

Single-Family Dwelling – Initial Full Alarm Response

Function	Staffing
1) Establish Incident Command for the overall coordination and direction of the full alarm assignment.	1
2) Establish uninterrupted water supply of a minimum 400 gpm (1520 L/min) for 30 minutes with supply line maintained by an operator	1
3) Establish effective water flow application rate of 300 gpm (1140 L/min) from two handlines, each of which has a minimum flow rate of 100 gpm (380 L/min) with each handline operated by a minimum of 2 members.	4
4) The provision of one support member for each deployed attack and backup line to provide hydrant hookup and assist in laying of hose lines, utility control and forcible entry.	2
5) Provision of at least one victim search and rescue team with each such team consisting of 2 members.	2
6) Provision of at least one team consisting of at least 2 members to raise ground ladders and perform ventilation.	2
7) If an aerial device is used in the operations, one member to function as the aerial operator.	1
8) An initial rapid intervention crew (IRIC) assembled from the initial attack crew and as the initial full alarm arrives, a sustained rapid intervention crew (RIC) of 4 members. *	4
Total effective response force with a minimum 16 (17 if an aerial device is used). ** See asterisk below	17

**NFPA 1710 (3.3.53) defines the Rapid Intervention Crew as a dedicated crew of at least one officer and three members, positioned outside the IDLH, trained and equipped as specified in NFPA 1407, who are assigned for rapid deployment to rescue lost or trapped firefighters.*

**NFPA 1710 (3.3.53.1) defines the initial rapid intervention crew (IRIC) as two members of the initial attack crew, positioned outside the IDLH, trained and equipped as specified in NFPA 1407 Standard for Training Fire Service Rapid Intervention Crews, who are assigned for rapid deployment (i.e. two in/two out) to rescue lost or trapped members.*

*** NFPA 1710 (5.2.2.3) An incident safety officer shall be deployed upon confirmation of a structural fire, at special operation incidents, or when significant risk is present to the member due to the nature of the incident. Further to this, NFPA 1710 (5.2.2.3.1) states that the safety officer meets the requirements as specified in NFPA 1521 Standard for Fire Department Safety Officer, and shall have the expertise to evaluate hazards and provide direction with respect to the overall safety of personnel.*

Open-Air Strip Shopping Centre – Initial Full Alarm Response

Function	Staffing
1) Establish Incident Command for the overall coordination and direction of the full alarm assignment with a minimum of 2 members dedicated to managing this task	2
2) Establish 2 uninterrupted water supplies of a minimum 500 gpm (1892 L/min) with each supply line maintained by an operator	2
3) Establish effective water flow application rate of 500 gpm (1892 L/min) from 3 handlines, each of which has a minimum flow rate of 150 gpm (568 L/min) with each handline operated by a minimum of 2 members.	6
4) The provision of one support member for each deployed attack, backup and exposure line to provide hydrant hookup and assist in laying of hose lines, utility control and forcible entry.	3
5) Provision of at least two victim search and rescue team with each such team consisting of a minimum of 2 members.	4
6) Provision of at least two teams consisting of at least 2 members to raise ground ladders and perform ventilation.	4
7) If an aerial device is used in the operations, one member to function as the aerial operator.	1
8) At a minimum, an initial rapid intervention crew (IRIC) assembled from the initial attack crew and as the initial full alarm arrives, a full and sustained rapid intervention crew (RIC) of 4 members.	4
9) The establishment of an initial medical care component of at least 2 members capable of providing immediate on-scene emergency medical care.	2
Total effective response force with a minimum 27 (28 if an aerial device is used).	28

Apartment – Initial Full Alarm Response

Function	Staffing
1) Establish Incident Command for the overall coordination and direction of the full alarm assignment with a minimum of 2 members dedicated to managing this task	2
2) Establish 2 uninterrupted water supplies of a minimum 400 gpm (1520 L/min) with each supply line maintained by an operator	2
3) Establish effective water flow application rate of 300 gpm (1140 L/min) from 3 handlines, each of which has a minimum flow rate of 100 gpm (380 L/min) with each handline operated by a minimum of 2 members.	6
4) The provision of one support member for each deployed attack, backup and exposure line to provide hydrant hookup and assist in laying of hose lines, utility control and forcible entry.	3
5) Provision of at least two victim search and rescue team with each such team consisting of a minimum of 2 members.	4
6) Provision of at least two teams consisting of at least 2 members to raise ground ladders and perform ventilation.	4
7) If an aerial device is used in the operations, one member to function as the aerial operator.	1
8) At a minimum, an initial rapid intervention crew (IRIC) assembled from the initial attack crew and as the initial full alarm arrives, a full and sustained rapid intervention crew (RIC) of 4 members.	4
9) The establishment of an initial medical care component of at least 2 members capable of providing immediate on-scene emergency medical care.	2
Total effective response force with a minimum 27 (28 if an aerial device is used).	28

High-Rise – Initial Full Alarm Response

Function	Staffing
1) Establish a stationary Incident Command post outside of the hazard zone for the overall coordination and direction of the full alarm assignment with a minimum of 1 officer with an aide dedicated to these tasks and operations are to be conducted in compliance with the Incident Command System.	2
2) Establishment of an uninterrupted water supply to the building standpipe/sprinkler system connection sufficient to support fire attack operations and if the building is equipped with a fire pump, one additional member with a radio to be sent to the fire pump location to monitor and maintain operations.	1/1
3) Establish effective water flow application rate on the fire floor at a minimum of 500 gpm (1892 L/min) from 2 handlines, each handline operated by a minimum of 2 members.	4
4) The establishment of an effective water flow application rate on the floor above the fire floor at a minimum of 250 gpm (946 L/min) from at least one handline, with each deployed handline operated by a minimum of 2 members to safely and effectively handle the line.	2
5) At a minimum, an initial rapid intervention crew (IRIC) assembled from the initial attack crew and as the initial full alarm arrives, a full and sustained rapid intervention crew (RIC) of 4 members.	4
6) Provision of two or more search and rescue teams consisting of at least 2 members each.	4
7) Provision of one officer, with an aide dedicated to establishing an oversight at or near the entry point on the fire floor(s).	2
8) Provision of one officer, with an aide, dedicated to establishing an oversight at or near the point of entry on the floor above the fire.	2
9) Provision of two or more evacuation management teams to assist and direct building occupants with evacuation or sheltering actions, with each team consisting of a minimum of 2 members.	4
10) Provision of one or more members to account for and manage elevator operations.	1
11) Provision of a minimum of 1 trained incident safety officer.	1
12) Provision of a minimum of 1 officer two floors below the fire floor to manage the interior staging area.	1
13) Provision of a minimum of 2 members to manage member rehabilitation and at least one of the members to be trained to the ALS level.	2
14) Provision of an officer and a minimum of 3 members to conduct vertical ventilation operations.	4
15) Provision of a minimum of 1 officer to manage the building lobby operations.	1
16) Provision of a minimum of 2 members to transport equipment to a location below the fire floor.	2
17) Provision of 1 officer to manage external base operations.	1
18) The establishment of an initial medical care component consisting of a minimum of two crews with a minimum of two members each with one member trained to the ALS level.	4
19) Total effective response force with a minimum of 42 (43 if the building is equipped with a fire pump)	43

Appendix F: US Residential Sprinkler Cases

Prince George's County, Maryland

In 1987, Prince George's County signed a mandatory fire sprinkler law for all residential structures and phased in the implementation over a period of 5 years so that in 1992 all newly constructed single-family homes were to be fully protected by a residential sprinkler system.

The Maryland State Fire Marshal's Office, the Prince George's County Fire Department and the University of Maryland conducted a study over a 15-year period from 1992-2007. During this timeframe there were 101 fire related deaths and 328 civilian injuries in single-family or townhouse fires with no fire sprinkler systems and only 6 injuries and no deaths with fire sprinkler systems. Residential dwellings made up 89% of the fire deaths during the 15-year study. More noteworthy is that the average fire loss in a non-sprinklered structure was \$49,503 as compared to \$9,983 with structures protected by a sprinkler system.

Bucks County, Pennsylvania

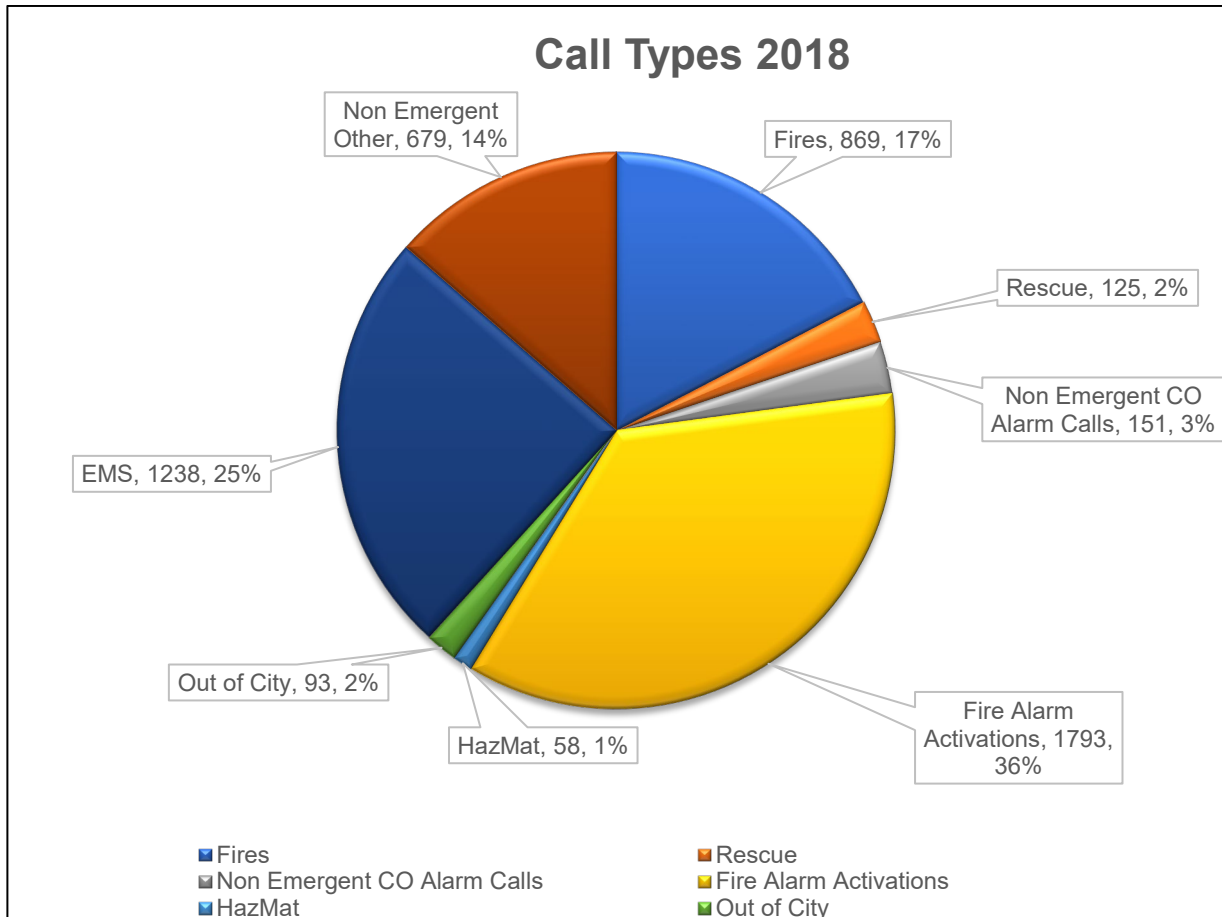
From 1988-2010 there were 90 fire related deaths in non-sprinklered, one- and two-family dwellings, and no fire deaths occurring with sprinklered dwellings. The 12-year study documented five incidents in sprinklered homes where at least five lives were saved. The fire losses for residential fire sprinkler properties was \$14,000 on average, while the non-sprinklered properties was \$179,896 on average. Interestingly, the study was able to determine that for sprinklered dwellings, an average of 1,287 liters (340 gallons) of water was used, while the non-sprinklered dwellings required about 22,614 liters (5,974 gallons) of water to extinguish the fire.

Scottsdale, Arizona

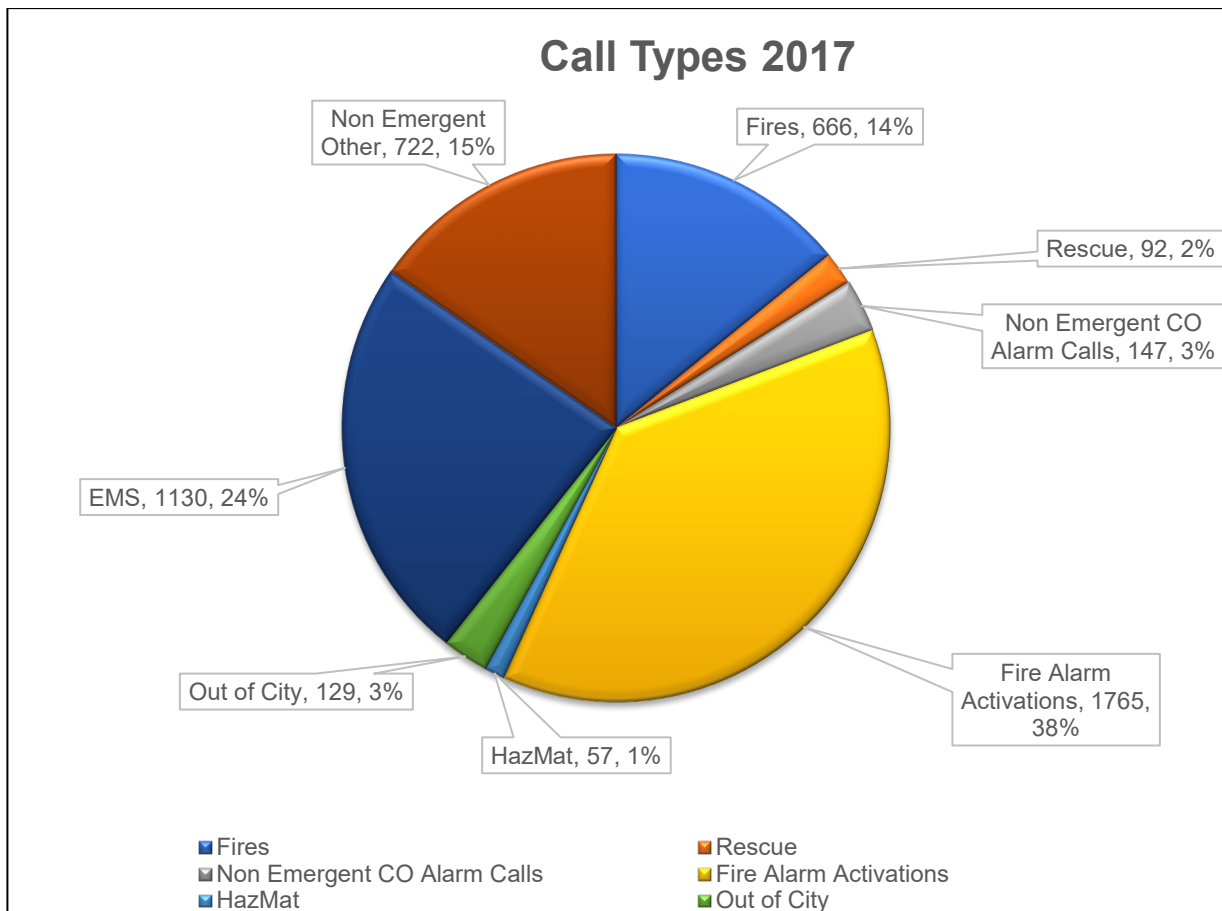
In 1985 the City of Scottsdale, Arizona passed an ordinance for mandatory single-family residential sprinkler systems and in a 10-year period the population of Scottsdale increased by 54%. From 1985-1996 a review of commercial, multi-family and single-family fires in the City of Scottsdale, indicated the average loss per sprinklered incident was \$1,945 as compared to \$17,067 per non-sprinklered incident. In that same timeframe, the study confirmed that 8 lives were saved because of the sprinkler system. The City of Scottsdale report also indicated that over the 10-year period 92% of all fire sprinkler activations controlled the fire with two or fewer sprinkler heads.

Appendix G: Call and Response Data

2018 Call Types



2017 Call Types



Appendix H: Types of Traffic Preemption

Acoustic

Acoustic systems use a detector at the intersections to identify the sound of sirens to change the traffic light.

Acoustic Advantages

- Use Emergency Vehicle siren as the “emitter”
- No additional devices to be installed on the apparatus

Acoustic Disadvantages

- Siren must attain decibel level of 120 dB so the vehicle must be in proximity reducing the ability to clear out lead traffic
- Requires four directional microphones for typical intersections
- Reliability is susceptible to:
 - reflected waves (echoes bouncing off buildings)
 - ambient noise
 - loud (120dB) car/tucks (e.g. music systems)
 - horns

Optical

Optical systems use a detector at the intersection to identify a strobe light pattern or IR (infrared) light being emitted by the emergency vehicle.

Optical Advantages

- Strobe lights or infra-red emitters are low priced per vehicle.

Optical Disadvantages

- works only under ideal conditions (proximal line of sight)
- requires four receivers at a typical intersection (greater installation cost)
- reliability is susceptible to visual obstructions (e.g. dirt)
- can be “blinded” by direct or reflected sunlight
- maintenance requirements are large (realignment due to winds, cleaning due to dust)
- can lock up traffic signals unless disengaged
- susceptible to pirating (emitters can be purchased)

Route-Based

In existence for over 20 years, Route Based Signal Pre-emption have predefined routes from fire stations to common response locations. When a call is received, the fire station or dispatcher activates a specific route and the intersection lights

are changed based on a predetermined route and travel speed. These systems are not effective if the response is from a location other than the station (e.g. if the truck is returning from another call) as the traffic light sequences are predetermined and timed from the start point to a general intersection and only take into consideration major routes. These systems are economical as they require minimal equipment are built into the main traffic control system and do not require hardware or installation at intersections.

Route-Based Advantages

- Lowest cost of all systems

Route-Based Disadvantages

- If normal response route changes due to detours, the system does not adapt from the most common routes from fire stations.
- Lights change on predetermined timing from the station, so if the truck is faster or slower than anticipated, the lights may be out of sequence for the response.
- Limited to most common routes.
- Whole preplanned route changes regardless of the location of the call (e.g. call is 3 blocks and route is 6 blocks, the lights are changed for all 6 blocks).

GPS

The newest technology uses GPS tracking of the apparatus which is fed into the traffic light control system via radio signal to adjust the lights. This cycles the traffic lights well in advance of the responding apparatus to ensure the intersection is clear before the trucks approach. Quebec City is the first city in Canada to implement this system where it is estimated that the time savings of an apparatus is approximately 12 seconds per intersection with traffic lights.

Some of the newest systems even track the turn signals on the emergency vehicles to provide for a left turn light on the traffic signal to activate ensuring the apparatus has the clear priority.

GPS Advantages

- Overcomes technical limitations of acoustic, optical, and route-based pre-emption systems.
- Only one Omni-directional antenna needed per intersection.
- More precisely pre-empt at the desired distance.
- Builds in timing for pedestrian signals.
- Reliability in heavy fog/snow/rain/dust.
- Not limited by obstructions: buildings, buses, semis, foliage, bridges.

-
- Works around curves and corners in roadway.
 - Does not require realignment after heavy winds.
 - Can be equipped with a vehicle collision avoidance system to warn of other emergency vehicles approaching.

GPS Disadvantages

- Initial installation costs are higher
- Annual licensing fees

Appendix I: Operations-Based Exercises

Operations-based exercises include:

- Drills - These are exercises that are intended to evaluate a specific operation. For example, the RPS, Regina EMS, and RFPS may conduct a drill of a high school hostage taking or shooting. Drills are easily set up and the benefit of performing drills is the value of performing a function and identifying any weaknesses. Weakness may include communication issues, staging concerns, or resource allocation to the scene. Drills are generally led by one instructor and a follow-up report (formal or informal) can be distributed to the respected agencies.
- Functional exercises - These exercises incorporate plans, procedures, and policies into the training scenario. For the most part, these exercises are used by agencies to test their capabilities of performing multiple functions in a scenario that is located at a single site. It is a more complex exercise than a drill and will have a high degree of realism that requires significant preparation time and resources. For example, RFPS could test its capability to respond to a significant hazardous materials incident in a city owned facility. Due to the realism and the objectives of testing specific agency functions, several instructors or facilitators are required to ensure safe operations and scenario compliance. At the conclusion of the exercise, debriefing should occur, and a formal After-Action Report should be completed and distributed to the agencies involved.
- Full-scale exercises - Generally a complex exercise that tests multiple agencies in a single scenario at multiple sites. These exercises are in real time, highly realistic, and usually stressful for agency personnel participating in the exercise. A well-prepared full-scale exercise can take from 6-10 months to prepare and require a significant investment in resources and funds. Due to the complexity of the exercise and different locations, several instructors and facilitators are required to ensure safety and compliance to the storyline of the exercise. A full-scale exercise is developed with clear objectives to test multiple agencies. Upon completion of the exercise, a hotwash is conducted. A hotwash is a formal discussion of the involved agencies performance during the exercise. An After-Action Report and a formal Improvement Plan are prepared and distributed that identify actions required to address and improve performance.



The Fire Master Plan is a guiding document to position Regina fire service for community and economic growth over the next 25 years.

Please visit Regina.ca/fire or call 306-777-7000 for more information.

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