Fire Services Master Plan

June 2016

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1 Executive Summary

Parkland County created a Steering Committee consisting of the General Manager of Community Services, the Manager of Finance and the Fire Chief to update its Fire Services Master Plan. Davis Consulting Group Ltd. was engaged to assist it gather and analyzing data, assess the current situation, conduct a household survey and facilitate development of the Master Plan's recommendations. Following Council review of the draft of the Master Plan, the public and Firefighters will again be consulted before finalization.

This Master Plan is intended to be strategic in nature. The recommendations are set forth as proposed Council policy statements which indicate outcomes and intentions that are meaningful to the community, and as Administration goals intended to implement the proposed policies.

The key findings are:

- There is a lack of definitive service levels set against which to plan and manage performance;
- Overall, there are slow responses and response capacity that doesn't match the risks encountered, due to:
  - Unreliable number of responders to emergency calls; this varies by station and time of day;
  - Difficult to recruit on-call Firefighters;
  - High turnover: Half have less than 2 years' experience;
  - Lack of availability during daytime hours; and
  - Distance of Firefighters (home or work) from stations means muster times can be slow;
- The County relies on contracted service for primary response in Districts 1, 3 and 5, but their capacities are limited and partners' needs, goals and approaches may not align well with the County's;
- Spruce Grove is notably absent among first response partners;
- Generally, there are good to excellent County facilities and equipment; exceptions are stations located in Wabamun and Seba Beach where facility assessments recently completed show significant renewal or replacement is necessary;
- The radio communication system is not performing as needed;
- The County lacks quality information to support governance, management and operations of the service; and
- Full-time management staff are not used to maximum value due to insufficient administrative supports.

The proposed Council Policy Statements and Administration Goals to address the issues identified and achieve the proposed service delivery goals are presented below.

Service Levels: Prevention

Proposed Council Policy Statement:

A.1 The County will reduce the likelihood of emergency incidents occurring, reduce the impact of incidents that do occur, and improve Firefighter effectiveness and safety through programs that include bylaws, permitting, Alberta Safety Code and Fire Code enforcement, inspections, pre-planning and targeted public education.

Administration Goals:

A.1.1 Within five years, conduct a detailed community risk assessment to improve identify hazards and access to structures.

A.1.2 Within five years, update the Quality Management Plan to meet industry standards and risk profile for prevention.

A.1.3 Focus education and awareness efforts on targeted priority hazards. (Ongoing)

A.1.4 Assume a leadership role among Alberta municipalities to influence the Province to allow municipalities the freedom to mandate building fire protection systems such as automated sprinklers that are above Alberta Building Code requirements. (Ongoing)

A.1.5. Develop coordination processes with Planning and other County departments to ensure that fire and other safety risks are adequately addressed in subdivision and development decisions.

Service Levels: Scope and Level of Emergency Responses Provided

Proposed Council Policy Statements:

B.1.1 Parkland County will maintain emergency response capabilities for structure fires, grass, brush and wildland fires, motor vehicle accidents, vehicle and machinery extrication, medical first response, and hazardous materials releases. Response to other kinds of emergency events may be provided by agreements with other jurisdictions or agencies, or by activating the County's Emergency Management Plan.

B.1.2 Parkland County will discontinue direct provision of water rescue, low angle rope rescue, trench and confined space rescue, relying on contracts for service from other jurisdictions or community agencies instead.

B.1.3 Parkland County will set response time targets and response capacities that provide effective fire and rescue services based on the risks faced by its citizens and businesses and reflecting industry leading practice, balanced against affordability. In light of the different risks inherent in the varying intensities of land uses and occupancies, Parkland County may establish different response time and capacity targets as well as fire attack strategy (interior or exterior) for each Fire District or station.

Administration Goals:

B.1.1 Within three years achieve response times and capacity for structure fire response:

a) In High Risk Industrial:

- A minimum of 15 Firefighters;
- First engine with four Firefighters: Dispatch, Chute and Drive time: 8 minutes (480 seconds) 90% of the time;
- Second engine with four standby Firefighters: Dispatch, Muster, Chute ad Drive time: 15 minutes (900 seconds) 90% of the time; and
- Third and subsequent engines with four on-call Firefighters: No response time target.

b) In Small Lot Residential Areas:

- First engine with four standby Firefighters: Dispatch, Chute and Drive time: 10 minutes (600 seconds) 90% of the time;
- Second engine with four on-call Firefighters: Dispatch, Muster, Chute ad Drive time: 15 minutes (900 seconds) 90% of the time
- Third and subsequent engines with four on-call Firefighters: No response time target
- c) In Other Districts (rural)
- 15 Firefighters, plus tankers and crews as necessary to support suppression where there is no water supply;
- First engine with four Firefighters: Dispatch, Muster, Chute and Drive time: 20 minutes (1200 seconds) 80% of the time

B.1.2 Within two years, arrange alternative service provision for low angle rope rescue, trench and confined space rescue, and water rescue.

B1.3 Within three years bring forward to Council a Fire Services Policy which clearly delineates the specific services which will be offered and those which will not be provided.

Staffing

Proposed Council Policy Statement:

C.1 Parkland County will rely on on-call and part-time Firefighters to the maximum extent that permits achievement of its service level targets. Where reliance on on-call or part-time staffing will result in slower than targeted response times and capacities, full-time Firefighters will be employed.

Administration Goals:

C.1.1 Within three years, increase response capacity in the Acheson Station by introducing two platoons of four in-station (full-time or part-time) Firefighters (10 FTEs in total, including casual replacements) on day shifts Monday through Sunday and platoons of standby Firefighters for evening coverage.

C.1.2 Within three years, in the Parkland Village Station increase response capacity by introducing one platoon of four standby Firefighters 24/7 in addition to on-call Firefighters.

C.1.3 Within five years, increase response capacity in all areas by adding one platoon of four in-station (full-time or part-time) Firefighters, stationed as centrally as possible within the County.

C.1.4 Within five years, increase response capacity in Acheson Station by introducing two platoons of four in-station (full-time or part-time) Firefighters (10 FTEs in total, including casual replacements) on night shifts and increasing the size of day shift platoons on weekdays by two full-time Firefighters (4 FTEs in total) and two standby Firefighters.

Training

Proposed Council Policy Statement:

D.1 Parkland County will invest in training for its Firefighters, so that all Firefighters will be trained to provide the level of services approved by Council. Progressive training will be provided to ensure a full capacity of competencies among Firefighters and Officers, based on recognized standards. Ongoing training will be provided to ensure job related competencies are maintained.

Administration Goals:

D.1.1 Develop a training program, based on NFPA programs, that match the services and service levels provided by Parkland County.

D.1.2 Develop applicable training standards and provide progressive training to ensure competencies in all services provided among Firefighters and Officers. (Ongoing)

D.1.2 Identify training ground needs and explore opportunities to share training grounds (existing or new) with Stony Plain, Spruce Grove and/or Devon.

Partnerships

Proposed Council Policy Statement:

E.1 Parkland County will collaborate with neighbouring municipalities to ensure effectiveness, efficiency, economy and equity in its fire/rescue services, sharing capacity, resources, expertise and costs and based on the principles of equitable sharing of benefits and risks, sharing of costs based on benefits received, communication and sharing of information regarding each partner's evolving needs and commitment to cooperation and consultation in decision-making.

Administration Goals:

E.1.1 Within one year, negotiate a new service agreement with Yellowhead County.

E.1.2 Within three years, update other existing fee for service agreements to ensure they reflect leading practice.

E.1.3 Assume leadership in exploring future options to provide more cost effective services through a unified regional fire/rescue service, possibly to include Stony Plain, Spruce Grove and all municipalities within or on the County's boundaries. (Ongoing)

Facilities, Apparatus and Equipment

Proposed Council Policy Statements:

F.1 Parkland County will acquire and maintain fire facilities, apparatus and equipment, based on assessed risks, approved service levels, innovations in firefighting practice, and industry standards for capacities and specifications.

F.2 Assets will be managed and funded to optimize lifecycle costs and meet industry equipment replacement standards.

Administration Goals:

F.1.1 Develop a plan to improve communication systems.

F.1.2 Bring forward information to Council to facilitate decisions on providing service in the Districts 4-7, including options for renewing, replacing or merging stations in Seba, Wabamun and Tomahawk.

F.1.3 Complete an apparatus review and replacement plan.

F.1.4 Identify training facility needs an explore opportunities to share training grounds (existing or new) with Stony Plain, Spruce Grove and/or Devon.

Management and Organization

Proposed Council Policy Statement:

G.1 Parkland County Fire Service will demonstrate leading management practices in capturing, managing and reporting performance data to support Council's governance role in determining the effectiveness of its policies, as well as to support operational planning and management to inform decision making at those level.

Administration Goals:

G.1.1 Increase administrative support to the Chief and Deputies.

G.1.2 Within three years, in conjunction with Information Services and the Emergency Communication Centre, develop an action plan to leverage technology and software to improve analytical and performance measurement capabilities.

G.1.2 Within three years, in conjunction with Corporate Services identify other administrative support needs and develop a plan to deploy needed resources. Recognizing the needs for training, human resource management, payroll and quartermaster functions is directly proportional to the number of on-call Firefighters employed, the plan must be flexible to provide sufficient resources so that Officers' can focus on management of the service.

Fiscal Management

Proposed Council Policy Statement:

H.1 Parkland County will consider taxation and service fee alternatives so that the increasing costs of the Fire Service are born equitably by the residents and businesses in the County, respecting the nature of the services as both standby and responsive.

Administration Goals:

H1.1. Within three years, bring forward recommendations to Council to implement fees for all services provided by the Fire Service.

2 Introduction

In early 2015, Parkland County began the process of updating of its Fire Services Master Plan, choosing The Davis Consulting Group with partners Fire Underwriters Survey, RC Strategies Inc. and Delta Factor, Inc. to facilitate this. Terms of reference for the updating project included:

> *"To conduct a review of the current Fire Services resource inventory, policies, procedures and practices within Parkland County and to identify opportunities and make recommendations for current and future service levels and service delivery. The Fire Services Master Plan will identify a coordinated and cooperative framework for Fire Services respecting the interests of Parkland County. It will address the County's residential, commercial, industrial, and wild land interface challenges, and the interaction of Parkland County with the neighbouring urban municipalities. The Plan will identify and be used in the development and implementation of short and long term objectives and strategies for the delivery of current and future levels of Fire Service for Parkland County."*

The Consulting Team, guided by a Steering Committee consisting of the General Manager of Community Services, the Fire Chief and the Manger of Finance, developed a detailed work plan to:

- Gather information about the Fire Service and how it delivers services;
- Assess how well the Fire Service delivers its services, comparing against industry standards, leading practice fire departments and a group of similar municipalities;
- Identify alternatives and assess them in terms of effectiveness, efficiency and value to the citizens and property owners in Parkland County; and
- Develop a recommended set of goals and actions to guide the evolution of the Fire Service to become a leading organization in its field.

The Consulting Team wishes to acknowledge the efforts and assistance of Parkland County staff – to whom this Master Plan belongs – and service delivery partners in other municipalities and organizations, who contributed greatly to this Master Plan, including:

Fire Chief (retired) Jim Phelan
Deputy Chief Amber Coleman
Interim CAO Rob McGowan
Community Services Manager Dave Cross
Devon Fire Chief Rob Main
Deputy Chief Shawn McKerry
Deputy Chief Trevor Sutherley
Senior Planner Martin Frigo
Evansburg Fire Chief Cory Chegwyn
Stony Plain Fire Trevor Mistal
Battalion and Platoon Chiefs in Wabamun, Seba Beach and Tomahawk stations
On-call Firefighters who contributed via survey and personal communication
TransAlta EHS Manager Brian Novak
Community Services General Manager Ken Van Buul

3 Alignment to County Mission, Vision, and Values

High performing organizations are value driven, and align their activities and employee efforts through clearly articulated Vision, Mission and Values. As part of its Strategic Planning exercise, the Council of Parkland County committed to the following statements.

3.1 Vision

Parkland County, home to…creative communities, dynamic connections, cherished ecosystems, resilient economies.

3.2 Mission

Parkland County represents the interests and aspirations of its citizens, providing quality municipal services through strategic governance and delivering the best outcomes for Parkland County as a whole.

3.3 Values

LEADERSHIP: Parkland County will create a harmonious environment, through mutual respect, trust and support that will establish Parkland County as a leader in the field of municipal government.

RESPONSIBILITY: Parkland County will conduct itself in an open and transparent manner, and provide quality service to residents and clients through efficient and effective practices while we undertake continuous improvement.

PROGRESSIVE: Parkland County will be innovative and creative by capitalizing on opportunities, embracing new technologies, adapting to change, and incorporating best practices.

COOPERATION: Parkland County will build and maintain strong relationships with residents, neighbouring municipalities, First Nations communities and other orders of government through collaboration, mutual respect and open communication.

COMMUNITY: Parkland County believes in the value of communities and will continue to support local groups and organizations. We will create and maintain safe, vibrant, sustainable and prosperous communities by maintaining and expanding infrastructure and services.

3.4 Strategic Priority Areas

AGRICULTURE: Parkland County stewards a viable agriculture community and is leading a progressive local agribusiness industry.

ECONOMIC DEVELOPMENT AND TOURISM: Parkland County creates a positive environment for economic development and tourism to leverage local assets to create wealth opportunities.

ENHANCED CONNECTIVITY: Parkland County invests in and promotes connectivity through information technology to enable the advancement of economic, social and environmental benefits within the municipality.

ENVIRONMENT: Parkland County embraces environmental social governance to create a legacy for future generations.

HEALTHY COMMUNITIES: Parkland County communities create strong supportive cultures through design excellence and proximity to amenities, services and recreational opportunities.

REGIONAL STRATEGY: Parkland County is a regional municipality that balances the service needs of both urban and rural residents. Parkland County is a leader in collaboration with regional partners.

3.5 Connection to the Parkland County Strategic Plan

Two key result areas in the County's Strategic Plan drive the need for this Fire Services Master Plan and the initiatives devised:

- Developing appropriate service levels for growth; and
- Establishing partnerships with public and private institutions.

The Parkland County Fire Service has developed its own mission statement which further guides development of this Master Plan:

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

This Master Plan is created to reflect the linkages from County Council Strategy, through Master Plan Policies and Goals to Fire Service Business Plans and Budgets, as shown at left. An Implementation Plan containing specific action items for the Fire Service Business Plans is created as a separate document, as part of the Master Planning process. Collectively, these plans will ensure that Parkland County's Fire Services are sustainable, supportable and principled.

4 Environmental Scan

4.1 Growth Demographics

The predominant factor defining emergency service delivery in Parkland County is growth. Parkland County sits in the North-South trade corridor – that set of connected highways linking communities from Grande Prairie to the U.S.-Mexico border – and is well positioned as a transportation and service hub. Growth is changing the shape of development in the County, the demographics of its citizens, and the viability of volunteer-based service models.

The volume and types of emergency services delivered by a municipality are a function of two key drivers: population and development. As either or both change, so will the need for service. Understanding how these drivers will change in the plan horizon will inform the assessment of risks for which the Parkland County Fire Service must be prepared to address.

The Parkland County Community Scan and Analysis (2015) presented key findings related to growth and demographics, with forecasts to 2061.

Exhibit 1 – Forecast Population Growth

Area	2011	2061 Low	2061 Base	2061 High
Division 1 total	5,455	11,1144	12,980	14,845
Division 2 total	6,005	10,721	12,275	13,830
Parkland Village	1,910	2,008	2,008	2,008
All other Division 2	4,095	8,713	10,268	11,822
Division 3 total	6,150	10,866	12,420	13,975
Division 4 total	4,780	7,610	8,542	9,475
Division 5 total	4,905	5,377	5,532	5,688
Carvel	30	38	38	38
Duffield	75	96	96	96
Keephills	50	64	64	64
All other Division 5	4,750	5,178	5,333	5,489
Division 6 total	3,270	3,742	3,897	4,053
Entwistle	440	565	565	565
Fallis	60	77	77	77
Gainford	140	180	180	180
Tomahawk	70	90	90	90
All other Division 6	2,560	2,831	2,986	3,141

- County population will grow at a steady pace, with a low-case estimate of 49,500 total residents by 2016, a high-case estimate of 61,900, and a base case of 55,700.
- The majority of population growth is expected in Divisions 1, 2 and 3. The Demographic and Economic Model used for the plan predicts growth as follows:

Exhibit 2 – Share of Future Population Growth

Area	Share of Future Growth
Division 1	30%
Division 2	25%
Division 3	25%
Division 4	15%
Division 5	2.5%
Division 6	2.5%

- To accommodate population growth in other areas, there will be an increase in the number of dwelling units by 1.6% annually or 78% over the 50-year growth period, again with the majority being in Divisions 1, 2 and 3.
- Between 2001 and 2011, the number of dwelling units maintained by seniors aged 65 and older increased by 60.7%. Based on current projections, the increase in percentage of senior-maintained dwellings is expected to increase another 153% by 2061.
- Average annual building permit volumes are expected to be:
  - 35 for industrial/commercial, and
  - 170 for residential

A caveat on future forecasts: these were made or updated during the period of increasing economic growth in Alberta, driven by energy demand. Since late 2014, with reduced oil prices and subsequent decline in the energy industry, the County's Planning forecasters are cautioning that, in the short term at least, actual activity may vary widely from forecasts. Notwithstanding, the following conclusions are relevant for the Fire Services Master Plan.

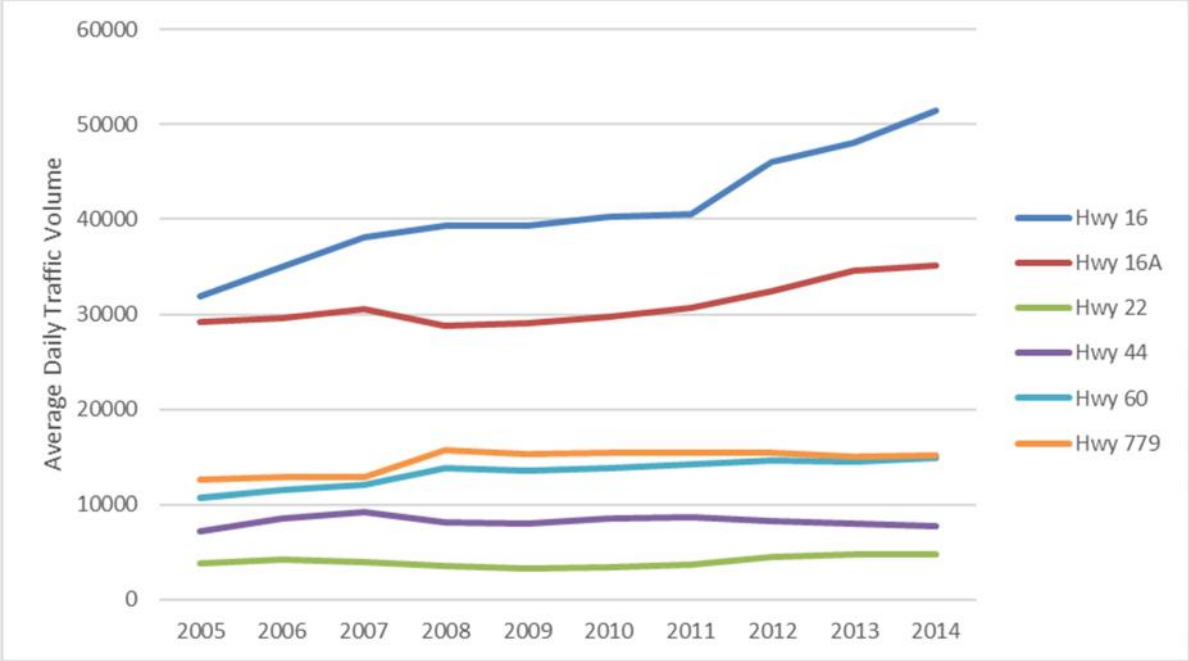
- Population of Parkland Village and the villages and hamlets in all Divisions is forecast to be nearly stagnant, unless the County takes additional steps to support or enhance growth in these areas.
- Seniors are not moving out of the County as they age and the volume of medical calls will increase with the number of independently-housed seniors.
- The impacts of the projected growth in non-agricultural land uses include the ability to accommodate increased population numbers and structures within the catchment area of existing and planned fire stations. Increased population and number of structures and the industries and businesses tenanted increases aggregate risks in the County.
- As the population of western areas of the County are stable, it is also aging. This changes both the risk profile of the communities (fewer rescues and increased medical responses are

expected), the more important impact is on the ability to recruit Firefighters. This is being experienced in Seba, Tomahawk and Wabamun districts at present.

4.2 Traffic Volumes

The growth discussed above has also resulted in 40% increase in traffic volumes on Highway 16 since 2004, with lesser increases on other major highways in the County. There are 51,000 vehicles per day using Highway 16 through Parkland County.

Exhibit 3 – Traffic Volumes



Increasing traffic volumes drive increased motor vehicle collisions which, along with medical assists, are the most common incident type to which the Fire Service responds.

4.3 Legal Environment

Emergency Services are delivered within a complex legal framework, with regulation imposed under:

- The Municipal Government Act, which states that a municipality may offer fire services, but is silent on the level of service to be provided. However, if service is offered at any level, there is an implicit expectation in law that the service be performed diligently, with professional standards for equipment, procedures and training maintained.
- The Ambulance Services Act regulates provision of emergency medical services. Consolidation of service under direction of Alberta Health Services has resulted in increased demand on municipal fire departments to act as first medical responders as ambulances staffed with EMTs are no longer under the control of municipalities and are generally less able to respond as quickly as before this change.
- The Occupational Health and Safety Act, and the Code of Practice for Firefighters require development of procedures and training to reduce risks to firefighter safety during

emergency events. This Code of Practice is very stringent in its requirements for equipment, procedures and training that pass scrutiny by regulators. Adoption of recognized standards is a safe way for Fire Departments to assure that requirements are met.

- The Environmental Protection Act requires careful handling and reporting of substance releases which may be harmful to the environment and that are incurred during emergency events.
- Safety Codes Act and its supporting regulations, the Alberta Fire Code and Building Code which require the County to adopt a Quality Management Plan outlining the scope of practice and frequency of building inspection along with the requirement to investigate all fires within the jurisdiction. The responsibility for construction fire safety plans was transferred from the Alberta Building Code to the Alberta Fire Code as a result of the High Intensity Residential Fires Working Group recommendations in 2008. Parkland County has responded, working toward new Fire Safety Plans and processes to enforce fire codes in new construction and renovation, and a framework to apply these across different construction types and locations. The Fire Service meets the Safety Codes Act requirements; exceeding them is limited by staffing availability.
- The Forest and Prairie Protection Act stipulates that the council of a county is responsible for fighting and controlling all fires within the boundaries of the municipal district. If the council of a county finds conditions that in its opinion constitute a fire hazard or a burning hazard, it may order the owner or the person in control of the land on which the hazard exists to reduce, remove or eliminate the hazard within a fixed time and in a manner prescribed by the council.

There is no requirement to provide rescue, medical first response or hazardous materials release response. But, if a municipality chooses to provide these services, it must do so in a way that conforms to the regulations cited above.

4.4 Social Environment

There has been an impact of the robust Alberta economy on workforce makeup. It has been common for persons to work out of town for extended periods, limiting their availability to work as part-time members of the Fire Service. Interest in part-time Firefighter roles has also declined, due in part to the high pay and longer hours being worked at regular jobs, and also by the increased emphasis on other activities in non-work hours. Many organizations which rely on volunteers have noted a decreased ability to recruit new members. This phenomenon is not unique to Parkland County. It is being experienced across most areas of Alberta and, indeed, North America.

With the recent downturn of the economy in Alberta, it is unknown if there will be more availability of potential Firefighter recruits.

4.5 Internal Interview Findings

The Consulting Team conducted one-on-one interviews with the following individuals:

- Members of Council
- Interim County Manager and County Manager

- General Manager, Community Services
- Director or Planning & Development
- Fire Chief and Deputy Fire Chiefs

Major Highlights of these interviews include:

- Department has done a good job: good equipment, training, and staffing
- Growth in County is changing the viability of the present model:
  - Recruitment and retention of volunteers is increasingly difficult
  - There is divergence in the need for higher levels of service in more developed area or whether County residents and businesses locate in a rural county with the expectation of lower services levels and taxes
- Risks are increasing
  - Not enough emphasis on fire prevention and education
  - Doesn't maximize the resources available
  - Increasingly difficult to provide service without more full time staff
  - Industry would prefer more full time staff and better response
- Fire Prevention - inspections and education - are currently not proactive or targeted
- Responding crews don't know the location of many high risk substances
  - This is a high risk factor, especially in the Acheson Business Park Area
- Needs to be better coordination with other fire services
  - Spruce Grove, Stony Plain and Devon could potentially be maximized
  - Good progress on Emergency Preparedness

4.6 Benchmarking Comparable Municipalities

To better understand practices of others, the Steering Committee selected six municipalities for benchmarking:

1. Leduc County (population 13,000)
2. Sturgeon County (population 20,000)
3. Rocky View County (population 38,000)
4. Foothills County (population 21,000)
5. County of Grande Prairie (population 22,000)
6. Red Deer County (population 20,000)

The Consulting Team was successful in accessing the first five of these, but was unable to coordinate with Red Deer County's fire service at the beginning of this busy fire season and, after multiple attempts, elected to complete the report without their input.

An interview outline was developed to gather data and discuss the following:

- Scope and structure of services

- Geographic scope – number, type, size of stations
- Services Offered (fire, rescue, hazardous materials, medical aid, water based)
- Equipment
- Urban rural mix
- Rural services, including use of certified tanker shuttle for areas without hydrants

- Service Demand
  - Data availability and use (available to share with us?)
  - Trends, changes in demand
- Notable Issues, successes, concerns
- Governance
  - Council relationship with fire services
  - Inter-municipal (council to council engagement; use of committees/ commissions/ authorities)
- Structure and Staffing
  - Senior structure (chiefs, deputies)
  - Organizational positioning, reporting
  - Structure and levels by type
  - Payment model (paid on call, standby, honorariums, etc.)
  - Training (source, how provided, costs, levels, targets)
  - Issues, challenges (i.e. recruitment, retention/turnover, impact of payment on retention etc.)
- Financial
  - Operating and Capital Costs (cost of contractors)
  - Revenues
  - Cost Sharing practices
  - Cost of service per capita (operating, capital)
- Inter-municipal
  - Service responses – whose Standard Operating Guidelines rule? Who decides what equipment responds?
  - Issues, benefits, expectations

Summary of Findings

Exhibit 4 – Comparative Scale and Structure

Note: where data is not available, not current or not complete, sections are left blank

	Parkland County	Leduc County	Sturgeon County	Rocky View County	MD of Foothills	County of Grande Prairie
Population	30,568	13,524	19,578	39,000	21,258	22,800
Area	2,388	2,608	2,089	1,500	3,600	5,863
# operated halls	5	3	4	7	5	5
# service agreements	3	5	3	7	4	4
Total call volume	737	617	832	n/a	1,479	n/a
Full-time staff: Leadership/ Mgmt & Admin	5: Chief Deputy (3+1)	5: Chief Deputy (2) Fire Marshall Admin (2)	4: Chief Deputy (2) Admin	4: Chief Deputy (1) District Chief (2)	7: Chief Deputy (1) Captains (4) Admin (1)	5.5 Chief Deputy (2) Fire Marshall (1) Admin (1.5)
Full-time Firefighters	0	16	2	24	4	16
Part-time Firefighters*	0	0	0	105	60	62
On-call Firefighters*	130	79	164	90	105	50
Operating Budget	$4.97M	$4.6M	n/a	$13M	$4M	$6-6.5M

*See discussion of language below.

Exhibit 5 – General Comparative Ratios

	Parkland	Leduc County	Sturgeon County	Rocky View County	MD of Foothills	County of Grande Prairie
Population (& % of largest)	30,568 78%	13,524 35%	19,578 50%	39,000 100%	21,258 55%	20,347 52%
Area (& % of largest)	2,388 41%	2,608 44%	2,089 36%	1,500 26%	3,600 61%	5,863 100%
Budget per capita	$163	$340	n/a	$333	$188	$319
Area served (Sq. Km) per station	298	326	298	107	400	651
Population per FT management/ Administrative staff	6,113	2,704	4,894	9,750	3,037	3,699

	Parkland	Leduc County	Sturgeon County	Rocky View County	MD of Foothills	County of Grande Prairie
Calls per 1,000 population	19	46	42	n/a	70	N/A
Part-time & on-call per station	26	26	41	28	33	22
Own apparatus provided to contracted partners	Yes – Yellowhead, Devon, Stony; plus, some cost shared apparatus	Yes – Edmonton International Airport, Calmar	Yes - Morinville	No	No, but fund (50%)	Yes
Contract pricing	Mostly fixed annual pricing; exception is First Nations contracts.	Fixed annual pricing plus per call payment	Fixed annual pricing	Fixed annual pricing plus per call payment	Fixed annual pricing plus per call payment	n/a

*Note: not all contracts are the same within each jurisdiction.

Inconsistent Turnover: A Pattern?

Turnover of staff generally falls into two groups:

- Very high and a real problem, and
- Very low and not a problem.

We analyzed the responses to attempt to understand why there might be such a polar difference. All municipalities have similar geographic and demographic characteristics (proximity to large urban centers, growth rates, mixed urban/rural, pockets of industrial development, country residential, etc.), and so should have generally similar staffing experiences. Our review cannot yield definitive conclusions, but observations include:

- All are generally self-sufficient in training and all express a commitment to training, so availability of training is not likely a factor.
- All are close to urban centers which provide full-time employment opportunities, so competing with their nearby urban centres should not be a bigger problem in one county than any other and is not likely a factor.
- Three out of the four which stated that turnover is not a problem have what are effectively part-time Firefighters - Rocky View, Foothills and Grande Prairie, but not Sturgeon. These three municipalities expect their Firefighters to work a minimum number of hours or shifts each month and compensate them for this. This is different than expecting Firefighters only to work as called and for training. In fact, many part-time Firefighters in suburban municipalities are also full-time Firefighters in other municipalities. This "double-hatting" phenomenon is not supported by the International Association of Firefighters, the largest and most common bargaining agent representing Firefighters. Nor is it accepted by many

full-time employers, although enforcement against this practice is largely absent. The suburban municipalities using part-time Firefighters benefit from being able to hire trained Firefighters who have high certainty of availability on the days off of their full-time positions.

Many departments that require a minimum number of work hours compensate Firefighters for both standby and on-duty hours, at differing rates. This system has been found elsewhere to improve turnout to calls for service, albeit at a higher overall cost than simply compensating for on-call.

4.6.1.1 Approach to Inter Municipal Contracts Inconsistent

There are no consistent patterns involving contracts with other municipalities:

- Two have allowed their service contracts with other municipalities to expire (Parkland County and Leduc County) and do not see the written agreements as important as the personal relationships; others keep contracts current and think them important.
- Sturgeon County believes contracts should be short term (3 years) in keeping with the rapid pace of change in communities; others see nothing wrong with five years or more.
- Some contracts are for fixed annual rates based on budgets and others for a combination of fixed and variable pricing. None used solely variable pricing.

4.6.1.2 Incident Command Authority

When asked if there is confusion or conflict over incident command authority when multiple stations respond to a call, none except Parkland indicated it to be a problem:

- Most indicated that authority automatically goes to the station responsible for the zone/district/area; and
- One indicated that the first on the scene is in charge.

One clarified that leadership of each company stays with their own respective captains regardless of incident command responsibility; direction from the incident commander is given to the captains who pass on instruction to their company.

4.6.1.3 Inspections

Almost all indicate that inspections are done principally on a reactive basis in response to safety code requirements or upon request, mostly for approvals for statutory requirements (e.g. liquor licensing). Two indicated a more robust proactive approach that includes documentation of each business facility circumstances and risks. While inspections for Fire Code adherence are conducted both municipalities stated that they do not prepare formal 'pre-plans'. While specific reasons may vary, both acknowledged a concern that if a pre-plan is in place for a location and something goes wrong at the scene of a fire, there may be a potential liability if the exact steps of the plan have not been followed.

4.6.1.4 Relations with Larger Municipalities

Interestingly, none of the municipalities surveyed indicated that they had strong, close ties with their most significant municipal neighbours.

- Parkland has no agreement in place with Spruce Grove.

- Sturgeon appears to have little interaction with St Albert.
- Foothills has some challenges with Calgary.
- Grande Prairie County took over two stations previously operated by the City of Grande Prairie but appears to have limited interaction with the City now.
- Leduc County's contract with the City of Leduc has expired and there are some issues related to responses by the City to County calls. However, the City and County are currently examining closer collaboration – a unified regional service.

4.6.1.5 Training and Service Levels

In British Columbia, the Provincial Fire Commissioner recognized the difficulty smaller urban and rural fire departments that use on-call Firefighters are having in meeting training obligations. While most larger departments have tried to adopt NFPA 1001 training as a target, the cost and time commitment was deemed to be unachievable for departments experiencing difficulties recruiting and retaining on-call firefighters. Also, there are modules in the NFPA training programs that are not applicable to the types of services provided by smaller departments.

In response and considering input from many industry stakeholders, the Fire Commissioner approved a Structure Firefighters Competency and Training Playbook which stipulates two levels of service and the training requirements needed to support each. The higher of the service levels is Interior, the attack strategy known as aggressive interior attack and permits firefighters to enter an engaged structure to attack the fire, under certain restrictions and conditions. The lower of the service levels is Exterior, which restricts fire suppression to that which can be delivered without entering the structure. This level of service is the attack strategy known as defensive and intended to keep the fire from spreading beyond the structure of origin. It may also extinguish a fire in the structure of origin.

The lower level of service also recognizes the fact that responses from on-call departments are slower, which means that structure fires have progressed further; often flashover has occurred and the level of damage to the structure is very significant, if not total. At this stage, interior attack is dangerous to firefighters and the chances of successful rescue of occupants is reduced significantly.

BC municipalities are required to select one of the two service levels and the training obligations that derive therefrom. Although no such requirement exists in Alberta, this practice is worth considering for a municipality such as Parkland.

5 Service Demand and Response Trends

Overall call volumes for Fire/Rescue for the past five years have been increasing by about 3% per year, as shown in the table below.

Exhibit 6 – Incident History by Type

Incident Type	2011	2012	2013	2014	2015
51 - Aircraft Emergency	0	0	0	1	1
52 - Alarm - False	101	94	112	152	159
53 - Citizen Assist / Service	8	7	5	10	7
54 - Confined Space/Structural Collapse	0	0	0	0	0
55 - Electrical Hazard	14	10	13	19	6
56 - Elevator / Escalator Rescue	0	0	0	0	0
57 - Explosion	2	3	1	0	1
58 - Extrication / Entrapment	0	3	0	5	0
59 - Fuel Spill	3	1	3	7	5
60 - Gas Leak / Gas Odor	13	11	15	11	14
61 - HAZMAT	4	2	1	7	5
62 - High Angle Rescue	0	0	0	0	0
63 - Lightning Strike	1	1	0	0	1
64 - Marine Fire	0	0	0	0	0
65 - Medical	58	59	57	55	71
65 - Mutual Aid - RCMP	3	1	0	2	6
65 - Mutual Aid / Assist Outside Agency	0	0	0	1	2
65 - Mutual Aid - Utility Co.	0	0	0	0	0
66 - Odor	5	0	5	2	0
67 - Outside Fire	108	118	122	107	115
68 - Smoke Investigation	6	4	7	5	3
69 - Structure Fire	33	47	23	38	46
70 - Train and Rail Collision	0	0	0	1	1
71 - Vehicle Fire	41	38	40	37	54
72 - Water Rescue	7	15	2	1	10
73 - Watercraft in Distress	10	7	4	4	11
74 - Suspicious Package	0	0	0	0	0
75 - Train and Rail Fire	0	0	1	0	0
76 - Bomb Threat	0	0	0	0	0
77 - Motor Vehicle Collision	259	246	286	254	248
98 - Municipal Exercise	1	0	0	0	2
Subtotal – In-County	677	667	697	719	768
Outside Aid	24	24	24	18	64
Total	701	691	721	737	832

The above figures do not include data from District 5, served by Yellowhead County and for which comparable data is not available.

Some significant observations are:

- The most common incidents and responses relate to motor vehicle collisions – almost 1/3 of all incidents and volume is stable at around 250 per year.
- False alarms account for a growing workload – in 2011 this incident type accounted for about 14% of all calls and in 2015 about 20%.
- Outside fires (including wildfires) account for about 15% of calls and are vary with such factors as spring weather conditions.
- Medical first responses have contributed about 8% of calls, with 2015 experiencing a significant increase in volume.
- Vehicle fires are almost as common as structure fires, each contributing less than 6% to the total.
- There are requests for response to rescues of various types, not all of which can be considered as emergencies. Many water-related rescues, for example, in fact relate to engine problems or out-of-fuel or where boaters are stranded. When motor vehicles experience similar difficulties, motorists do not call the Fire Service; it is questionable if the Fire Service should respond to similar requests from boaters.

Considering location, the table below presents total incidents in 2011 to 2015, by District, again with District 5, served by Yellowhead County unavailable.

Exhibit 7 – Incidents by District Total for Five Years Ending 2015

	District 1 Devon	**District 2** Parkland Village/ Acheson	**District 3** Stony Plain	**District 4** Wabamun	**District 6** Tomahawk	**District 7** Seba Beach
51 - Aircraft Emergency	0	0	2	0	0	0
52 - Alarm - False	65	328	124	52	19	30
53 - Citizen Assist / Service	4	16	8	9	0	0
54 - Confined Space/Structural Collapse	0	0	0	0	0	0
55 - Electrical Hazard	14	22	15	8	0	3
56 - Elevator / Escalator Rescue	0	0	0	0	0	0
57 - Explosion	0	2	3	1	1	0
58 - Extrication / Entrapment	1	3	2	2	0	0
59 - Fuel Spill	0	9	9	0	1	0
60 - Gas Leak / Gas Odor	9	28	17	8	1	1
61 - HAZMAT	0	8	7	4	0	0

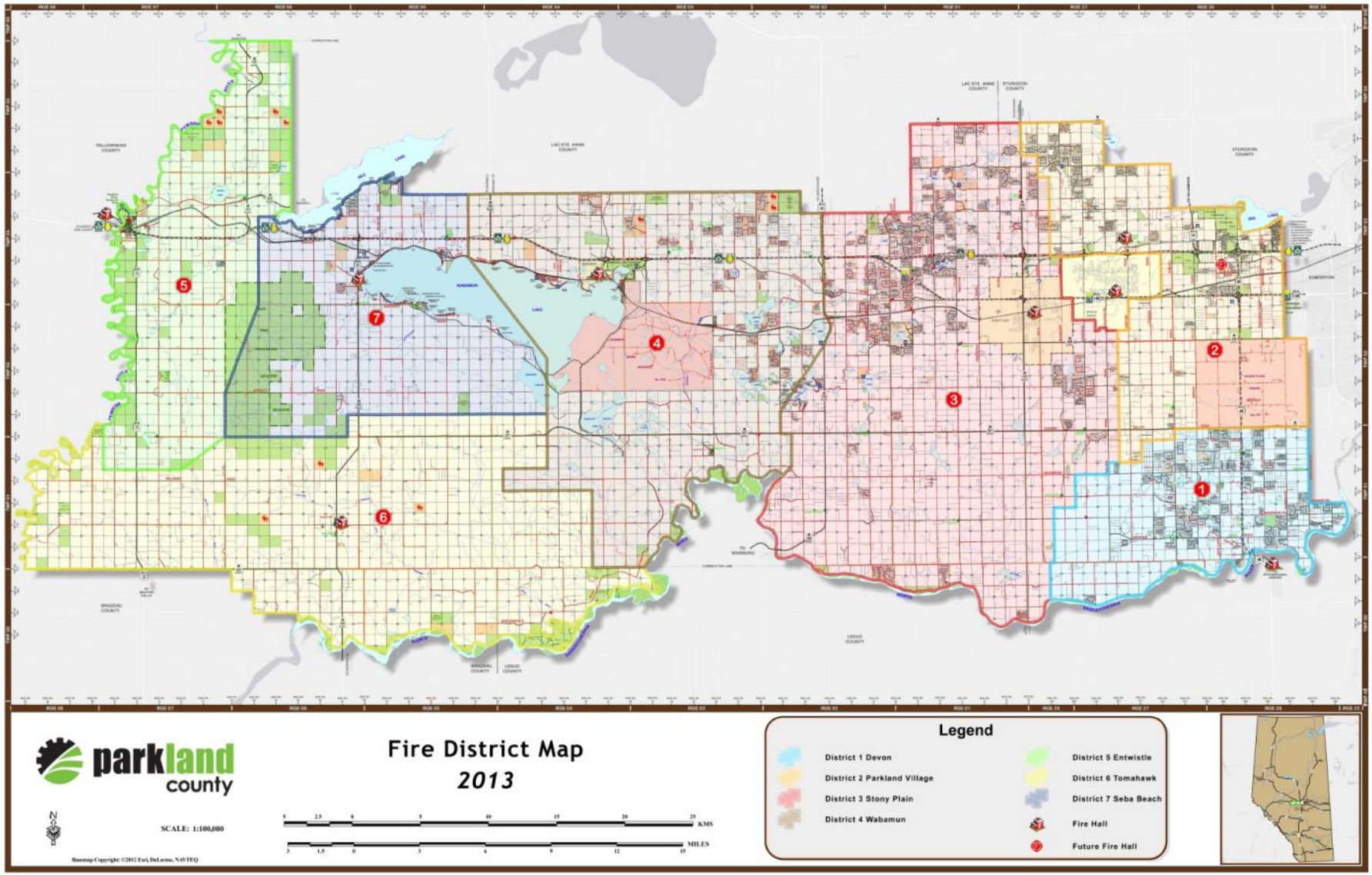
	District 1 Devon	District 2 Parkland Village/ Acheson	District 3 Stony Plain	District 4 Wabamun	District 6 Tomahawk	District 7 Seba Beach
62 - High Angle Rescue	0	0	0	0	0	0
63 - Lightning Strike	3	0	0	0	0	0
64 - Marine Fire	0	0	0	0	0	0
65 - Medical	33	76	73	67	26	25
65 - Mutual Aid - RCMP	3	3	1	4	0	1
65 - Mutual Aid / Assist Outside Agency	0	0	1	1	0	1
65 - Mutual Aid - Utility Co.	0	0	0	0	0	0
66 - Odor	2	7	2	1	0	0
67 - Outside Fire	75	155	188	79	45	28
68 - Smoke Investigation	5	6	6	4	2	2
69 - Structure Fire	34	54	60	20	4	15
70 - Train and Rail Collision	0	1	0	1	0	0
71 - Vehicle Fire	22	64	75	26	6	17
72 - Water Rescue	16	0	4	15	0	0
73 - Watercraft in Distress	10	0	0	23	1	2
74 - Suspicious Package	0	0	0	0	0	0
75 - Train and Rail Fire	0	0	0	0	0	1
76 - Bomb Threat	0	0	0	0	0	0
77 - Motor Vehicle Collision	119	451	449	199	39	36
98 - Municipal Exercise	0	2	1	0	0	0
98 - Aid Request - No Re	0	0	0	0	0	0
Total	415	1235	1047	524	145	162

Responses are clustered along the primary and secondary highways (motor vehicle collisions being the most common incident) as well as in population centres. The majority of responses occur in Districts 1-4, where population and development is concentrated. Conversely, call volumes in Districts 5-7 are low. Fire stations at Wabamun, Seba and Tomahawk while positioned well to serve the developed and populated areas of their districts and provide staging of part-time members who are most likely to live or work nearby, face challenges:

- Populations are stagnant and aging, presenting a small base of new recruits. As a result, the number of members in these districts is low and the number of responders to calls is unreliable and sometimes too few.
- Costs in Wabamun and Seba will increase as these stations require significant upgrading in the near future along with regular replacement of the apparatus maintained in these stations.

In 2015, Yellowhead County advised of its plan to build a new station to replace the one at Evansburg and to hire full-time staffing. This will increase Parkland County's share of the costs. At the beginning of 2016, Yellowhead County served notice to terminate the existing outdated agreement with Parkland County; a new agreement will need to be negotiated if Parkland County wishes to continue to have service from Yellowhead County.

Figure 6 – Fire Districts and Stations



6 Recommendations

6.1 Service Levels: Prevention

Proposed Council Policy Statement:

Proposed Council Policy Statement:

A.1 The County will reduce the likelihood of emergency incidents occurring, reduce the impact of incidents that do occur, and improve Firefighter effectiveness and safety through programs that include bylaws, permitting, Alberta Safety Code and Fire Code enforcement, inspections, pre-planning and targeted public education.

Administration Goals:

A.1.1 Within five years, conduct a detailed community risk assessment to improve identify hazards and access to structures.

A.1.2 Within five years, update the Quality Management Plan to meet industry standards and risk profile for prevention.

A.1.3 Focus education and awareness efforts on targeted priority hazards. (Ongoing)

A.1.4 Assume a leadership role among Alberta municipalities to influence the Province to allow municipalities the freedom to mandate building fire protection systems such as automated sprinklers that are above Alberta Building Code requirements. (Ongoing)

A.1.5. Develop coordination processes with Planning and other County departments to ensure that fire and other safety risks are adequately addressed in subdivision and development decisions.

Justification

The risk profile for Parkland County has changed, as the County has evolved from mostly rural/agricultural to industrial and country residential in its eastern areas. Even in industrial areas, the County's risks continue to evolve as the County's economic development efforts abandon the previous large lots used for lay-down yards supporting construction and oil industries, shifting to a more recent focus on transportation and logistics (large warehouses) and today's strategy to attract more intensive commercial/office developments. This change reflects a goal of increasing the assessed value of properties. But changes in development also result in changes in risks and exposure to property and personal losses. County Council and the Administration cannot assume that previous and current levels of public safety protection will be adequate to serve new development patterns: professional input from Fire Services is needed.

An effective prevention program has been shown to reduce the likelihood and impact of fires and other emergencies, thus mitigating threats to life and property. To most cost effectively conduct prevention

programs, they must be tailored to the unique risks found in Parkland County. This requires inventorying risks and assessing their likelihood and impact. To a large extent, this is done in a generalized manner in formulating the County's Quality Management Plan. Recommendations A.1.1 and A.1.2 would strengthen the County's prevention programs by increasing the level of detail available upon which decisions on prevention and public education are made and focusing resources to where their value is highest.

Parkland County has a Fire prevention program in place. The County's approved Quality Management Plan includes:

- Plans examination (when applicable),
- Permit issuance,
- Follow-up inspections or verification of compliance (when applicable) and
- Site inspections, according to the following schedule.

Exhibit 9 – Inspection Schedule

Activity	Type of Use or Occupancy	Inspection Frequency
New construction	Storage tanks for flammable or combustible liquids	Once on acceptance of Verification of Compliance or within one year of permit issuance
Alteration, addition, renovation, reconstruction or removal	Storage tanks for flammable or combustible liquids	Verification of Compliance within one year of permit issuance
Fire Safety Plan implementation and practices	All new construction, alteration, addition, renovation, reconstruction or removal	One inspection where risk to occupied residence is identified
Compliance inspections	Special events	Once
	Assemblies (all classes), care or detention facilities	Once every three years
	Residences (1-12) units	Upon complaint or request
	Residences (13 or more units)	Once every three years
	Group D	Once every five years
	Group E	Once every five years
	Group F, Division 1	Once every two years
	Group F, Division 2	Once every three years
	Group F, Division 3	Once every five years

The Fire Service does not currently have sufficient staffing to be able to keep up with this schedule, although with the addition of full-time Firefighters as recommended in this Master Plan, more resources will be available.

The County has also committed through its Quality Management Plan to Fire prevention programs that include public awareness and consultative services orientated to individuals, business, and industry in understanding and providing effective fire safety plans. The County committed to support and provide one or more of the following educational programs annually:

- School curriculum,
- Minority focused programs,
- Seniors programs,
- Community education, and
- Other programs such as but not limited to:
  - Risk Watch (an injury prevention program),
  - Getting to Know Fire (fire educator lesson plans),
  - Seniors Fire Safety Programs,
  - Juvenile Fire-setter Intervention Program,
  - Fire Smart, and
  - Shelter-in-place.

While the available choices are quite broad, Parkland County does not have the resources to be able to develop and deliver programs in all areas. Focusing awareness efforts on those that are related to priority hazards uses resources to highest value.

It should also be noted that the Fire Permit Bylaw 22-2012 regulates intentional burning and fireworks in the County. This bylaw is intended to reduce the number and severity of open-area fires. Actual fires have been reducing over the past five years, but it there is insufficient information to be able to state that there is a causal relationship with the bylaw.

The impact of a rigourous inspection regime has been noted by the insurance industry. Twenty percent of the marks in grading fire protection services is awarded for prevention programs, most of which applies to inspections.

Where ongoing inspections are performed, information gathered can include the existence and location of explosive, flammable, or toxic materials, access points to interior spaces and existence of on-site fire protection systems such as standpipes, key box locations, etc. This information is ideally used by the Fire Service to preplan approaches to response, to aid in more effective response to fires and to facilitate Firefighter safety. Ongoing inspection and preplanning is labour intensive, but can be assigned to accredited full-time Firefighters in districts they serve.

Monitored alarms offer the advantage of decreasing the time from a fire igniting to it being reported to initiate response and are required for some commercial and industrial occupancies by the Alberta Building Code. Automatic sprinkler systems are required for most commercial and industrial occupancies, schools and residential care occupancies, but not for residences. Sprinklers have proven to be effective in controlling fires in their early stages, in the room of origin. This limits structural damages

and has been shown to dramatically reduce injuries and deaths. The insurance industry recognizes the reduction in fire losses provided by sprinklers and offers reduced premiums where these systems are in place. As a rule of thumb, a working sprinkler system provides suppression effectiveness similar to an engine company responding within 6.5 minutes (the National Fire Protection Association's service target for urban, full-time departments). Essentially, requiring sprinkler systems moves a portion of fire suppression from being publicly provided to being privately provided by those who benefit.

Municipalities may not have the authority to enforce requirements for any systems or internal fire protection systems such as monitored alarms and sprinklers that are beyond what is stipulated by the Alberta Building Code. This limits the ability of municipalities to optimize fire protection among all available methods including public fire protection (hydrants and fire department responses) as well as internal fire protection through alarms and sprinklers. There is opportunity for Parkland County to take on leadership at the administrative and political levels to change Provincial statutes and regulations to permit municipalities this freedom.

It should be noted that the householder focus group strongly supported increased emphasis on prevention.

Leading practice in Fire Services is moving toward an Integrated Risk Management Model that:

- Uses evidence to assess all types of fire, health and safety risks in the community;
- Manages risks through targeted, community-based risk reduction strategies and flexible approaches to incident response;
- Organizes resources to best meet the varying risks found in different areas of the community;
- Collects data, measuring service outcomes, adjusting service levels accordingly.

The beginning of this process relies on a detailed community risk assessment, updated regularly, that addresses all risks:

- Medical hazards;
- Fires, of all types;
- Hazardous materials releases;
- Transportation disruptions and vehicle collisions;
- Structure collapses; and
- Natural disasters.

For each type of event, key questions are posed:

- What is the risk posed?
- Why does the risk exist – what factors or behaviours create the risk?
- Who specifically is at risk?
- Where are risks the highest?

- What is the likelihood of the event occurring?
- How does the risk rate, in terms of priority?
- How can the risk be prevented or lessened?
- How should the Fire Service respond to the events that do occur?

The Community Risk Assessment is therefore much broader than the existing or planned prevention programs, which are focused on fire risks only, and in higher risk occupancies. Moving toward this leading practice should form a long term goal of the Fire Service. Conducting a Community Risk Assessment is the first step.

6.2 Service Levels: Scope and Level of Emergency Responses Provided

Proposed Council Policy Statements:

B.1.1 Parkland County will maintain emergency response capabilities for structure fires, grass, brush and wildland fires, motor vehicle accidents, vehicle and machinery extrication, medical first response, and hazardous materials releases. Response to other kinds of emergency events may be provided by agreements with other jurisdictions or agencies, or by activating the County's Emergency Management Plan.

B.1.2 Parkland County will discontinue direct provision of water rescue, low angle rope rescue, trench and confined space rescue, relying on contracts for service from other jurisdictions or non-profit community agencies instead.

B.1.3 Parkland County will set response time targets and response capacities that provide effective fire and rescue services based on the risks faced by its citizens and businesses and reflecting industry leading practice, balanced against affordability. In light of the different risks inherent in the varying intensities of land uses and occupancies, Parkland County may establish different response time and capacity targets as well as fire attack strategy (interior or exterior) for each Fire District or station.

Administration Goals:

B.1.1 Within three years achieve response times, determine attack strategy and capacity for structure fire response:

a) In High Risk Industrial:

- A minimum of 15 Firefighters;
- First engine with four Firefighters: Dispatch, Chute and Drive time: 8 minutes (480 seconds) 90% of the time;
- Second engine with four standby Firefighters: Dispatch, Muster, Chute ad Drive time: 15 minutes (900 seconds) 90% of the time; and
- Third and subsequent engines with four on-call Firefighters: No response time target.

b) In Small Lot Residential Areas:

- First engine with four standby Firefighters: Dispatch, Chute and Drive time: 10 minutes (600 seconds) 90% of the time;

- Second engine with four on-call Firefighters: Dispatch, Muster, Chute ad Drive time: 15 minutes (900 seconds) 90% of the time
- Third and subsequent engines with four on-call Firefighters: No response time target

c) In Other Districts (rural)

- 15 Firefighters, plus tankers and crews as necessary to support suppression where there is no water supply;
- First engine with four Firefighters: Dispatch, Muster, Chute and Drive time: 20 minutes (1200 seconds) 80% of the time

B.1.2 Within two years, arrange alternative service provision for low angle rope rescue, trench and confined space rescue, and water rescue.

B1.3 Within three years bring forward to Council a Fire Services Policy which clearly delineates the specific services which will be offered and those which will not be provided.

Justification

The primary function of all fire departments is the timely delivery of quality emergency services. The critical performance measure of service delivery is *Response Time*. Response time is the total amount of time between the receipt of the initial call in the dispatch center (phone ring) and the arrival of fire apparatus (wheel stop) at the incident scene. Response time consists of several time elements:

Dispatch Time – the amount of time that it takes to receive and process an emergency call. This includes receiving the call, determining the nature of the emergency, verifying the location of the emergency, determining what resources are required to handle the call and notifying the units that are to respond.

Turn Out Time – the amount of time that it takes Firefighters to react after receiving dispatch information, on-call members to muster to the station (collectively, Muster Time), and don turnout gear and prepare to leave the station (Chute Time to wheel start).

Travel Time – the amount of time that it takes for a piece of fire apparatus to travel from the fire station to the incident scene (wheel start to wheel stop).

*Access Time – t*he amount of time required for the fire crew to move from where the apparatus stops to where the emergency exists. Ex. moving through building to fire location.

Set-up Time – the amount of time required by a fire department to set up, connect hose lines, position ladders, etc. and prepare to extinguish fire.

Leading fire departments establish service delivery standards or response time goals for their departments so that they have an indicator or benchmark by which to measure their service delivery. To date, Parkland County has not done this, but it is a key component of this Master Plan.

Various standards and guidelines have been developed to help manage response times and set reasonable goals that can be achieved the majority of the time. Equally important to having goals, it is critical that the Fire Service record response times in as many of the components as possible, thus capturing performance data to determine the level the fire department is meeting.

Community Risk Assessment

A critical element to the development of services level or Standards of Cover is a risk assessment. The factors used as input in the risk assessment process are both physical and theoretical. Everything begins with the description of the community risk. The key factors considered in assessing community risk for the Parkland County are summarized below:

Key Demographic Characteristics

Population age composition and density impact the risks in the community, with older populations generating more medical first response calls and higher density of population increasing the number of expected emergency events occurring. Higher density of population and associated housing and human services are found in the eastern districts, in particular Parkland Village and small lot country residential developments found in these areas.

Key Geospatial Characteristics

Political Boundaries

Parkland County has a land area of 2,387.68 km^2, divided into seven fire districts. Three districts (1, 3, and 5) are served through contract agreements with cost sharing arrangements. Other Fire Districts are operated by Parkland County with cost sharing arrangements.

Spruce Grove has no agreement with Parkland County to provide first response in the County. A previous agreement was terminated by the County in 1994 over fees proposed by the City.

Parkland County has fee for service agreements with the Enoch First Nation and Wabamun Indian Reserve 133A and 133B.

Infrastructure Limitations

Water distribution systems with hydrants are found in

- a portion of Fire District 2, specifically the Acheson industrial area and various residential subdivisions;
- Parkland Village (private system);
- Entwistle;
- Stony Plain; and
- Wabamun.

No hydrant use agreement exists between Parkland County and the City of Spruce Grove to utilize hydrants for shuttling operations

Transportation Network

Roads and vehicles are sources of incidents within the service area. These service demands come in the form of accidents, medical calls, and fires.

Highway 16 bisects the County, has a speed limit of 110 km/h. Highways 43 and 60 also carry large traffic volumes, with multiple access points.

Other significant highways include 16A, 22, 627, 628, 765, 770, 757, 759, and 779.

Road ways are a mix of paved and gravel throughout the County.

The growth discussed above has also resulted in 40% increase in traffic volumes on Highway 16 since 2004, with lesser increases on other major highways in the County. There are 51,000 vehicles per day using Highway 16 through Parkland County.

The mainline CN Rail runs through Parkland County and large portions of Dangerous goods are shipped. The risks to the community from rail are well known:

- 2013 - 13 car derailment near Gainford;
- 2005 - 40 car derailment near Wabamun Lake spilling 800,000 Litres of bunker oil

Multiple large and small waterways exist throughout Parkland County. The largest water source is Wabamun Lake. Other large water sources are used for recreational purposes.

There is a small private airport in the southeast portion of Parkland County, serving small airplanes. In addition, portions of the County are within the flight paths of the Edmonton International Airport.

Disaster Exposure

Potential Risks include:

- Floods are possible but not significant enough to warrant further review at this time.
- Wildland Interface Fires are an ongoing risk; the Duffield Wildfire in 2001 as well as the Swiss Valley fire in 2002 were notable instances of this.
- Wind events are possible but not significant enough to warrant further review at this time.
- The landscape of Parkland County is crossed by many pipelines carrying oil, natural gas and refined products.

Building (Occupancy) Risk

Fire Flow – the amount of water to control a fire – is based on structure, contents and exposures. These factors can be surmised from examining the occupancies that are permitted in each of the land use zone categories, and is presented below.

Exhibit 10 – Required Fire Flow Analysis

Zoning	Low		High	
	Risk Rating	Fire Flow (Igpm[1])	Risk Rating	Fire Flow (Igpm)
Acheson Industrial Commercial Area Overlay	2	800-1,000	4(b)	3,000-3,600
Agriculture General District	2	800-1,000	3(a)	1200-2000
Agriculture Restricted District	2	800-1,000	3(a)	1200-2000
Agriculture/Nature Conservation District	c	800-1,000	2	800-1,000
Atim Creek/Big Lake Overlay	2	800-1,000	2	800-1,000
Bareland Recreational Resort District	2	800-1,000	2	800-1,000
Business Industrial District	2	800-1,000	4(b)	7,000-7,600
Conservation District	2	800-1,000	2	800-1,000
Country Residential District	2	800-1,000	3(a)	1,200-2,000
Country Residential Estate District	3(a)	1,200-2,000	3(a)	1,200-2,000
County Residential Restricted District	2	800-1,000	2	800-1,000
Country Residential Work/Live District	2	800-1,000	3(a)	1,200-2,000
Direct Control District	2	800-1,000	2	800-1,000
Entwistle Urban Village District	2	800-1,000	2	800-1,000
Highway Commercial District	2	800-1,000	3(a)	2,200-2,800
Industrial Reserve District	3(a)	1,200-2,000	3(a)	1,200-2,000
Lakeshore Residential District	2	800-1,000	2	800-1,000
Local Commercial District	2	800-1,000	2	800-1,000
Medium Industrial District	3(a)	1,200-2,000	3(b)	3,800-4200
Public Service District	3(a)	1,200-2,000	3(a)	1,200-2,000
Recreation District	2	800-1000	3(a)	2,200-2,800
Residential Row Housing District	3(a)	1,200-2,000	3(a)	1,200-2,000
Resource Extraction District	3(a)	1,200-2,000	3(b)	3800-4200
Restricted Development Area	2	800-1000	2	800-1000
Rural Centre District	2	800-1000	3(a)	2200-2800
Rural Industrial/Commercial District	3(a)	1,200-2,000	3(a)	1,200-2,000

Adequate response to a fire emergency is generally measured by the speed of which a responding firefighting crew(s) can arrive at the fire emergency with the type and amount of resources to have a reasonable degree of opportunity to control or extinguish a fire. Simply put, the response provided by a firefighting crew should equal the potential severity of the fire or fire emergency with regard to life safety risk and property loss risk. The required response from a firefighting crew is greater if life safety is

[1] *Imperial gallons per minute*

a factor. Therefore, the greater the occupant load, the greater the expected response. This is true at a building level (example response to a hotel would be expected to be greater than response than a residence) and at community level.

The potential severity of a fire event is generally associated with the fuel load present and exposures to the fire. Factors such as building construction materials, quality of construction, building renovation history, building size, height and age, occupancy and hazards associated with the contents and occupancy will all contribute to the potential severity of a fire. In addition, other buildings sufficiently exposed to a burning building can contribute to the magnitude of a fire and the resources necessary to control or extinguish a given fire. Alternatively, building controls and internal fire protection systems (along with their maintenance) that limit fire spread can be used to reduce the potential severity of a fire and the overall fire risk.

Fire Growth and Flashover

To aid in establishing service level objectives one critical timeline drives response time needs for structural fire protection. It is known as flashover[2]. Flashover, being the most significant threat to life and property, is that which the service level is intended to mitigate prior to occurrence. Flashover can be expected to occur within a three to 10 minute timeframe depending on the fire load of the room of origin.

Flashover is a critical stage of fire growth for two reasons. First, the survival rate in the room of origin drops, so the chance of saving lives decreases dramatically. Second, flashover creates a quantum jump in the rate of combustion, and a significantly greater amount of water is needed to reduce the burning material below its ignition temperature. When a fire has reached flashover, it is rare to save anyone in the room of origin, and more staffing is required to handle the larger hose streams needed to extinguish the fire. A post-flashover fire burns hotter and moves faster, compounding the search and rescue problems in the remainder of the structure. At the same time, more Firefighters are needed for the fire attack.[3] Beyond the point of flashover, it can become very difficult to combat a fire as fire growth increases exponentially.

There is no standardized system to measure the level of response although various systems exist with some more widely accepted than others. However, while non-standardized systems exist, the intent of all systems is to arrive at a fire scene with the necessary resources before the point of flashover (see the Fire Propagation Curve, below). For this Master Plan there is extensive reference to the National Fire Protection Association (NFPA) standards as a benchmark for comparing Parkland County's performance against. NFPA standards are widely accepted as best practice.

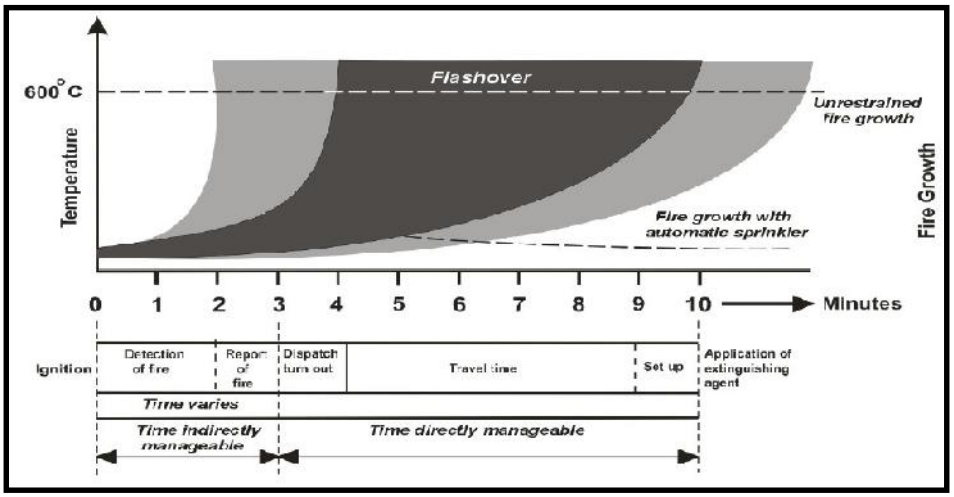
Fire growth can expand extremely quickly (50 times its volume per minute). The time segment between fire ignition and the start of fire suppression activities is critical and has a direct relationship to fire deaths and injuries and fire losses, as well as the safety of Firefighters initiating search, rescue and

[2] *Flashover – A dramatic event in a room fire that rapidly leads to full involvement; an event that can occur at a smoke temperature of 500 to 600°C. Principles of Fire Behaviour , 1998*

[3] *Centre for Fire Accreditation International Standards of Cover, 5th Edition Chapter 4 pg. 81*

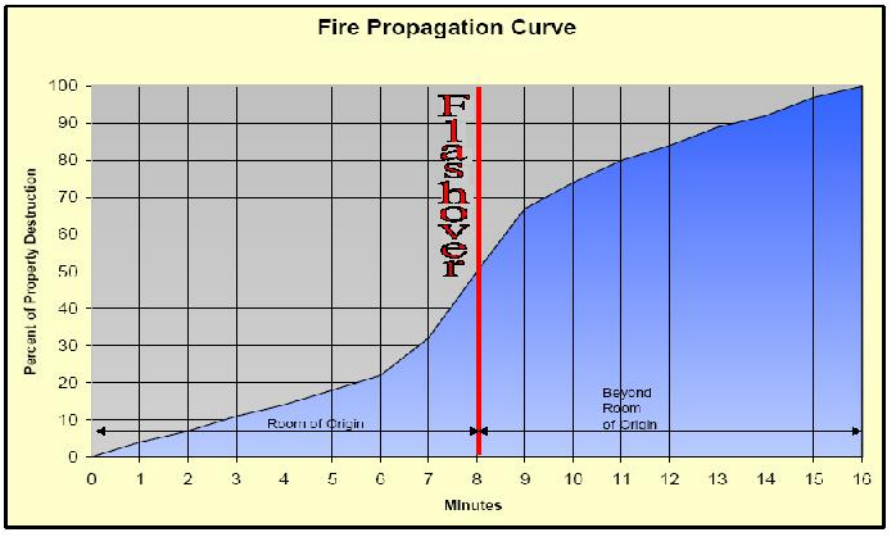
firefighting operations. The Fire Propagation Curve has been developed after research by the National Research Council and others who built and set fire to structures to study fire behavior. It provides an illustration of fire growth over time and the sequence of events that represent fire detection and response times.

Exhibit 11 – Fire Propagation Curve



Review of data about fire responses and losses by the National Fire Protection Association provides evidence that rapid and aggressive interior attack can substantially reduce the human and property loss associated with structural fires. Consequently, given that the progression of a structural fire to the point of flashover generally occurs in less than 10 minutes, one of the most important elements in limiting fire spread will be reducing the response time of the fire department. The figure below shows an alternative fire propagation curve for a modeled fire in a typical single-family dwelling, and the corresponding degree of loss.

Exhibit 12 - Fire Propagation Curve and Correlation to Property Loss



Regardless of whether flashover occurs within four minutes or in eight minutes as depicted in the figures above, all of the figures illustrate the need for a timely and efficient response once a fire has been reported.

Dispatch Time

The receipt of the alarm and the dispatch of units are manageable by the way that alarms are received and the way that dispatch activities are handled. Properly designed and used enhanced 911 and computer aided dispatch systems can effectively minimize the time required to receive and handle alarms. Parkland County Fire Service is dispatched by Parkland Emergency Communication Centre and therefore dispatch time can be directly influenced by Parkland County Fire Service.

The National Fire Protection Association (NFPA) establishes a standard (NFPA 1221) for dispatch:

> *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.*
>
> *With the exception of the call types identified in 7.4.2.2, 80 percent of emergency alarm processing shall be completed within 60 seconds, and 95 percent of alarm processing shall be completed within 106 seconds.*

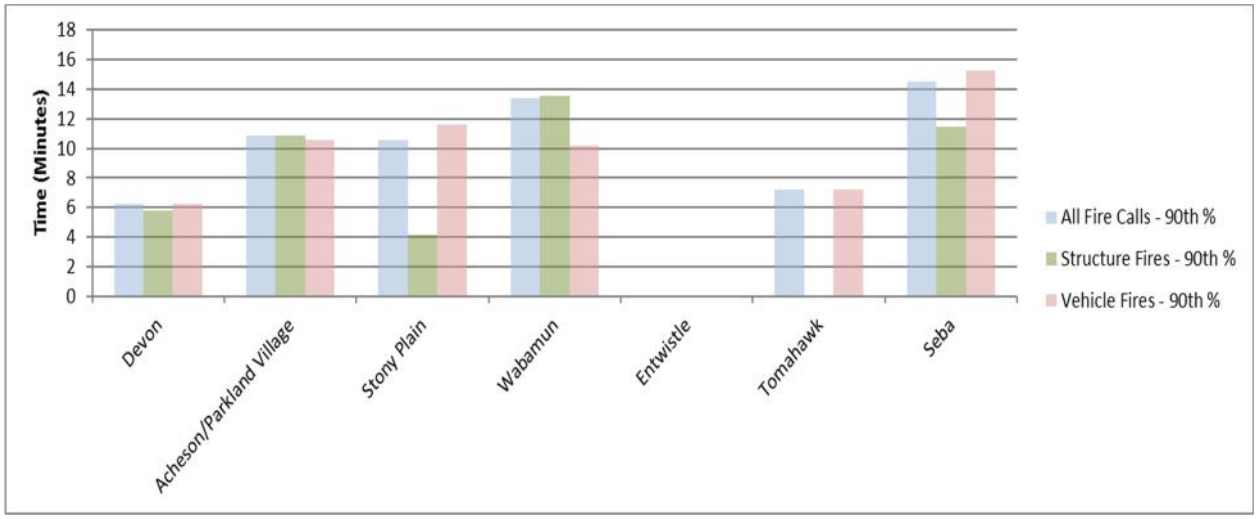
Turn Out Time

In career and composite fire departments, turn out time may be managed to some degree by decreasing the time required for crews to receive alarm information (through improved communications). In on-call fire departments, turn out time may also be managed (to some degree) by placing resources including fire station and apparatus strategically in the community to minimize the amount of time for on-call Firefighters to travel to the fire station.

NFPA 1710 standard for full-time Fire Departments states a time objective of one minute from receipt of call in station to wheel start, 90% of the time. This objective is recognized as being unrealistic, as few fire departments achieve it. Because on-call Firefighters are usually away from the station when a call is received, there is no standard for muster time. It should be noted, though, that the fire engine cannot leave the station until the full complement of the engine company arrives.

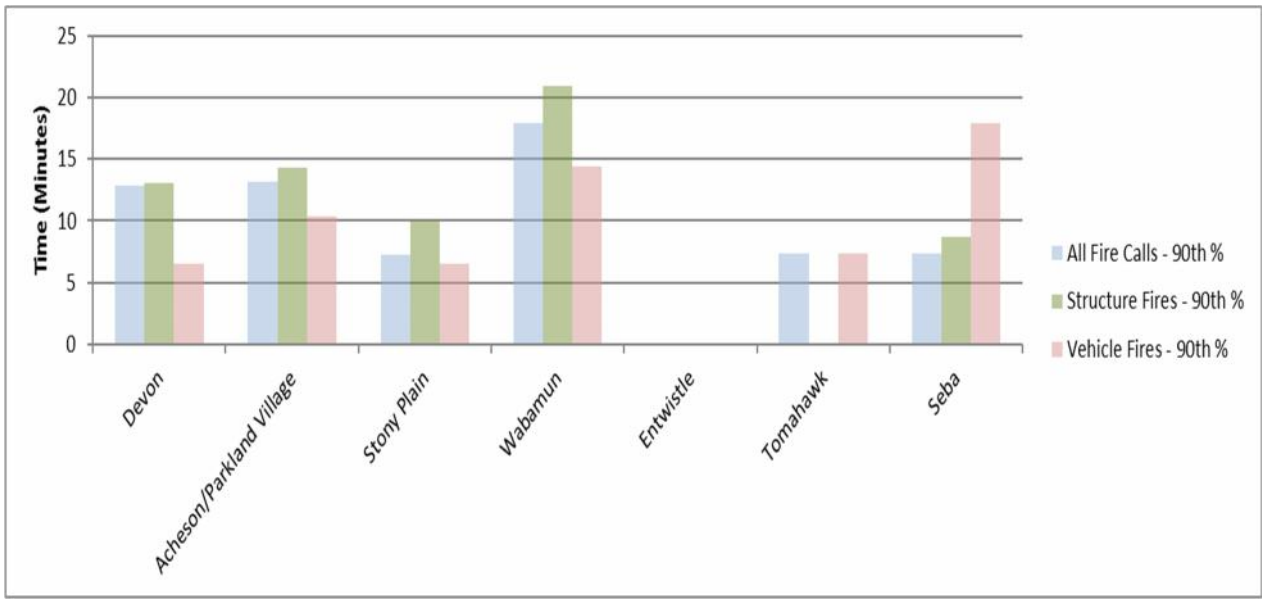
Average muster and turnout times for all districts except District 5 (for which data is not available) is shown in the exhibits below.

Exhibit 13 –Turnout Times 2014



Data for Entwistle is not available; some data from Tomahawk is omitted because of errors in capturing.

Exhibit 14 –Turnout Times 2015



Travel Time

Travel time is one of the most manageable segments of time in the entire sequence. This is the amount of time required for a piece of fire apparatus to travel from a fire station to an incident scene (wheel start to wheel stop). For Fire Departments in an urban setting, NFPA establishes a standard (NFPA 1710) of four minutes (240 seconds) or less for the arrival of the first arriving engine company and/or 8 minutes (480 seconds) or less for the deployment of a full first alarm assignment at a fire suppression incident, 90% of the time.

In rural and remote areas, NFPA recognizes that travel time is a function of distance of the scene from the station and suggests that one minute per kilometre is an appropriate increment.

Parkland County does not measure travel time at present.

Initiate Action/Intervention Time (Access Time)

While this time is not included in Response Time, it certainly impacts fire losses. Access time can be managed with an effective pre-fire planning program that familiarizes Firefighters with access points and travel routes through buildings. The use of key boxes can facilitate access in buildings that may be locked and coordinating efforts with security forces can also reduce access time.

Parkland County does not conduct pre-planning at present, nor are key boxes used.

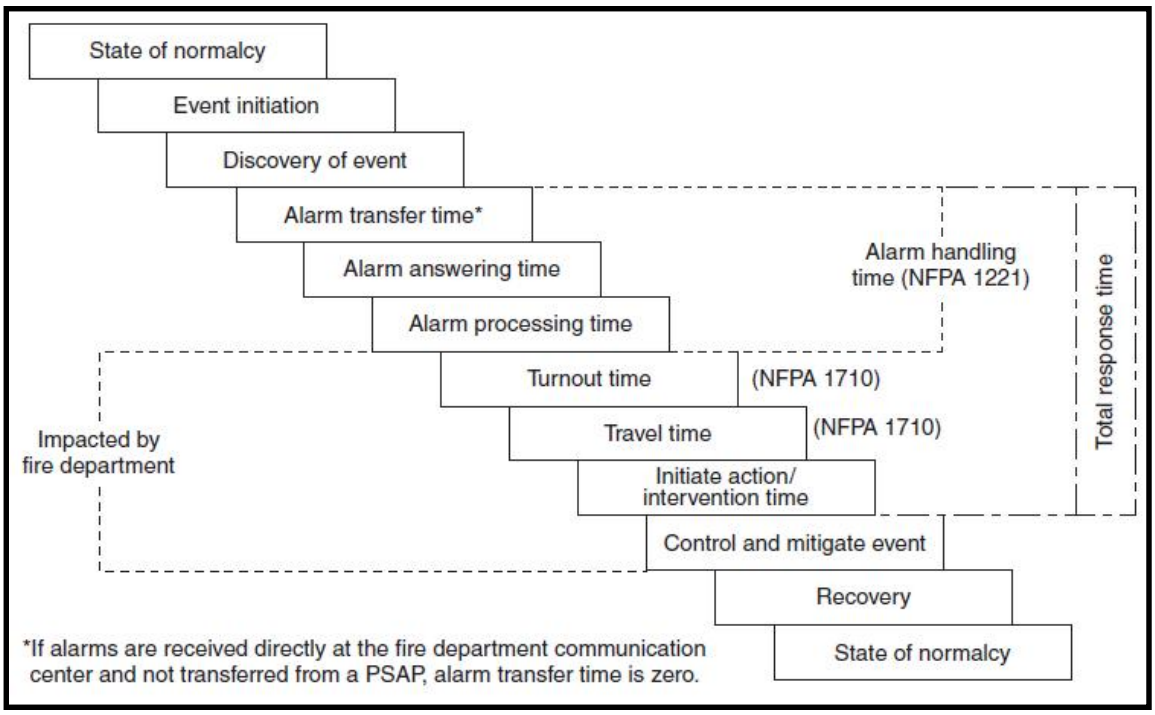
Control and Mitigation of Event (Set Up Time)

Set up time is also not included in Response Time, although it impacts fire losses. It can be effectively reduced with regular fire department training and practice. Providing the fire department with proper equipment can also improve set-up time. Parkland County Fire Service requires members attend training sessions to practice set up and suppression tasks. There are no reported issues with equipment impeding set up time.

NFPA 1720 (for on-call Fire Departments) states that, upon assembling the necessary resources at the emergency scene, the fire department should have the capability to safely commence an initial attack within 2 minutes, 90 percent of the time.

The figure below shows the components of response and the standards which can be applied to manage them.

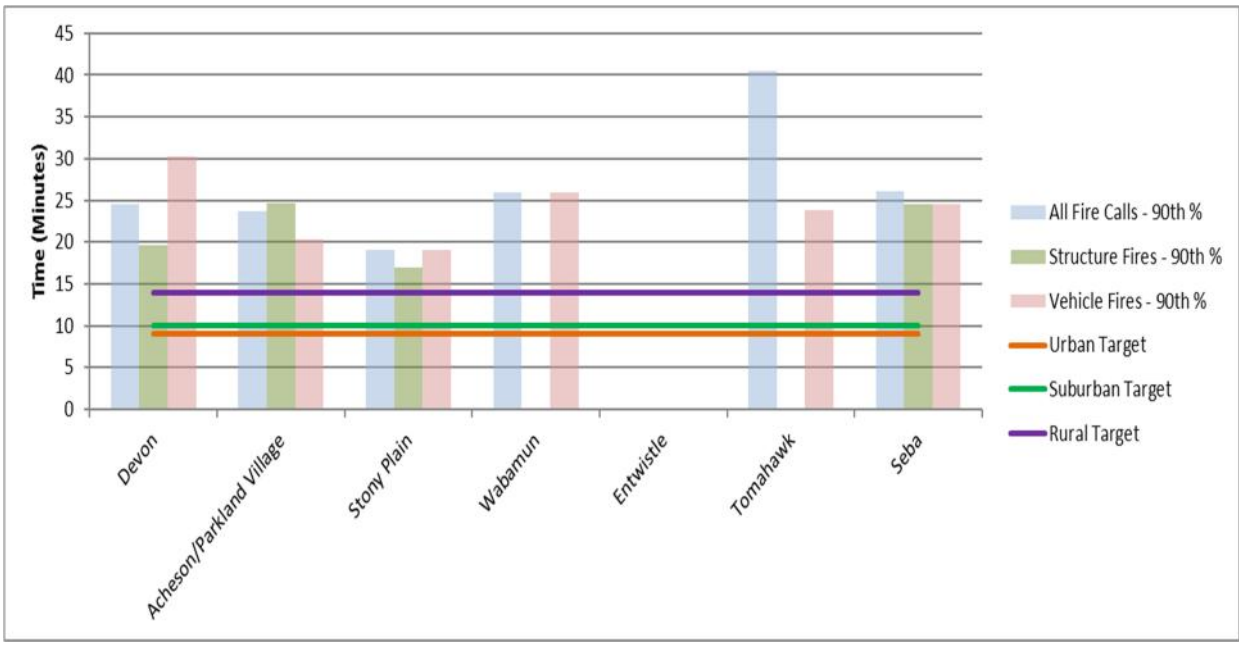
Exhibit 15– Cascade of Events Chart



Overall Response Times

Total response time – the sum of all of the factors from receipt of call at the Fire Dispatch Centre to the first engine arriving on scene – for 2014 is shown in the chart below. While it is not suggested that Parkland County should adhere to NFPA targets, the chart shows NFPA targets for urban, suburban. and rural areas. The NFPA target for remote areas is 14 minutes, plus one minute per kilometre of travel.

Exhibit 16 – Total Response Times 2014



More completely, NFPA targets are presented below.

Exhibit 17 – NFPA Target Response Times

Zone	People/sq. mi	Minimum Staff to Respond	Timing – First Engine
Urban	>1,000	15	9 minutes, 90% of time
Suburban	500 – 1,000	10	10 minutes, 80% of time
Rural	<500	6	14 minutes, 80% of time
Remote, > 13 km travel	N/A	4	14 minutes + 1 minute per km, 80% of time

Response times for the Wabamun and Seba districts are very high, reflecting the long turnout times. Response times from Tomahawk reflect distances travelled. In all three districts, response times are hindered by lack of adequate numbers of responders, particularly daytime availability. Firefighters expressed their frustration while waiting for the fourth member to arrive so the engine could leave the station.

Both Stony Plain and Yellowhead County experienced similar issues with availability of Firefighters in daytimes; each municipality has responded by hiring full-time staff for daytimes.

Response times in the Acheson/Parkland Village District, for which risks approach those expected in suburban areas, are not aligned at all with the risks faced. Business managers in Acheson expressed surprise when they learned of current response times and capacities.

One result of longer response times is that, when a structure fire has advanced, both the outcome of property saved from destruction and Firefighter safety are compromised. Tactically, the incident commander on scene will assess the conditions and may determine that an interior attack of the fire or rescue attempt is not effective or safe and that exterior-only efforts will be undertaken.

Other Call Types

Parkland County currently provides responses to other types of emergencies than fires:

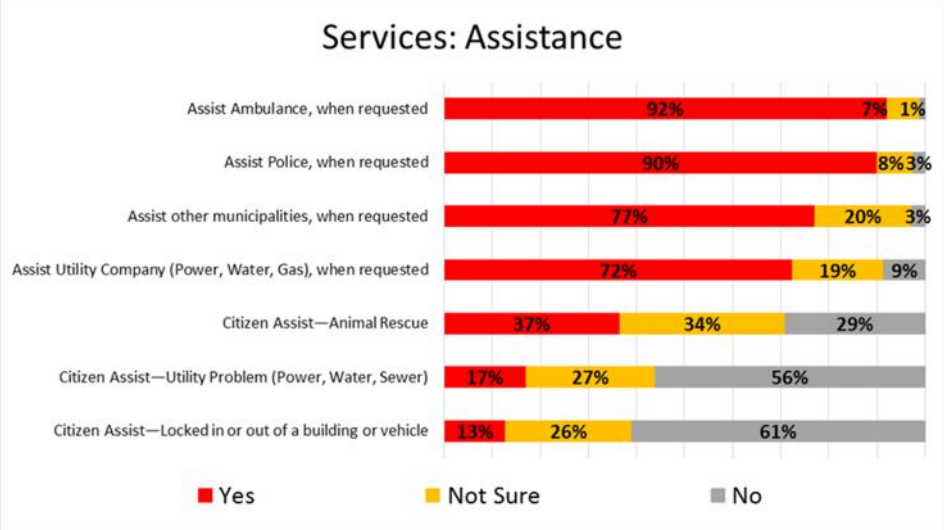
Exhibit 18 – Non-Fire Calls

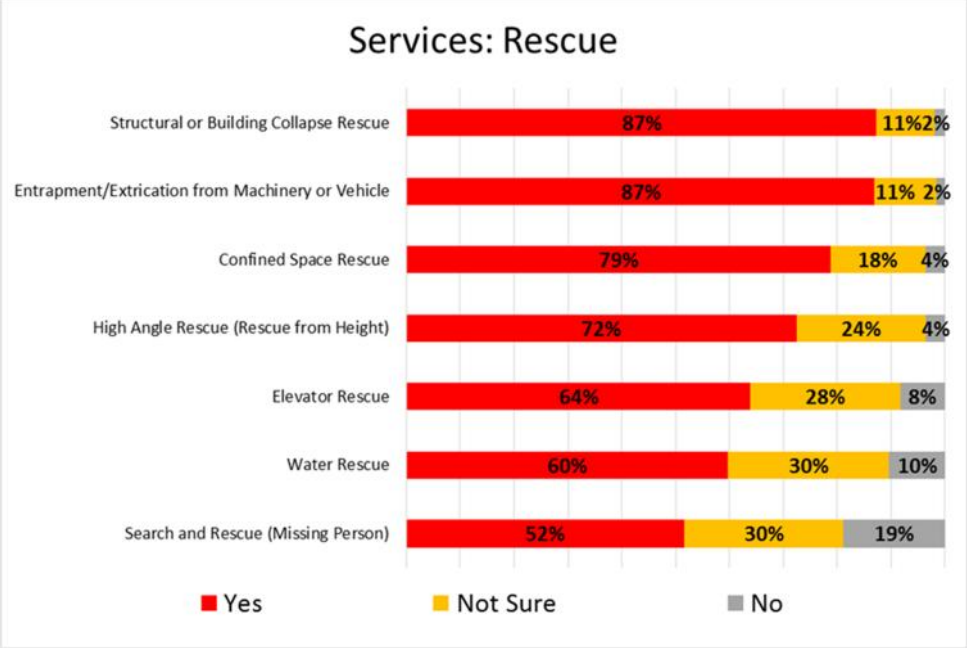
Call type	Total Incidents 2011 - 2015
Aircraft distress	2
Medical first response, motor vehicle accidents, vehicle and machinery extrication	1,332
Extrication/entrapment (non-vehicle)	8
Watercraft in distress	37
Confined space/structure collapse	0

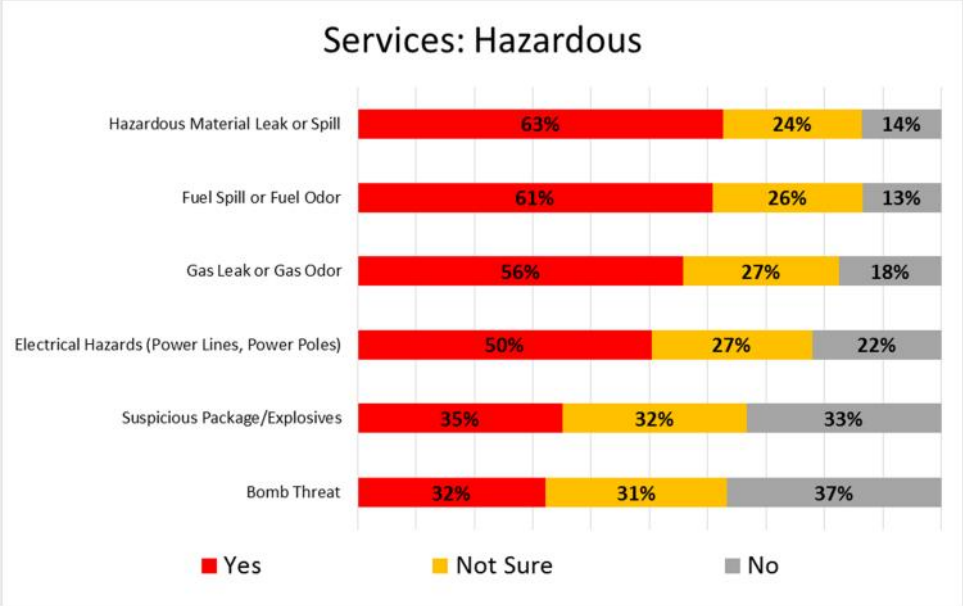
Mutual aid to Alberta Health Services ambulance crews (mainly lift assists)	349
Hazardous materials release	20
High angle rescue	0
Train/rail collision or derailment	6
Boater assistance (non-emergency)	44

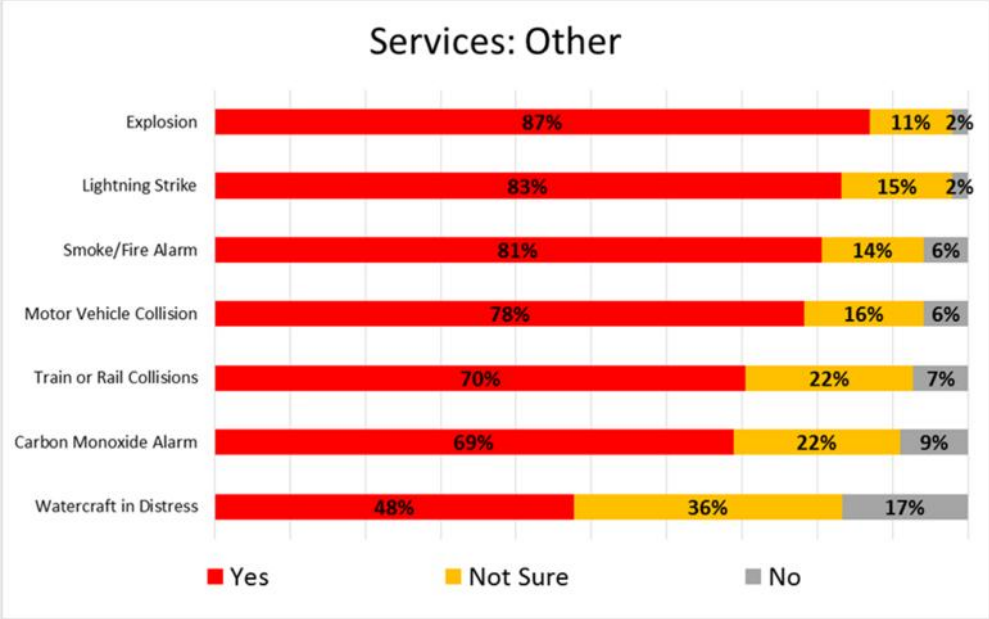
The public survey conducted for this Master Plan showed good support for continuing to provide only some of these services. Support was strongest when potential threats to life exists or there is lack of available alternative service providers with capacity to respond quickly and effectively. Follow-up focus groups strongly urged charging fees for all services provided.

Exhibit 19 – Public Support for Assistance, Rescue and Other Services




Services: Rescue
Structural or Building Collapse Rescue
87%
11%
2%
Entrapment/Extrication from Machinery or Vehicle
87%
11%
2%
Confined Space Rescue
79%
18%
4%
High Angle Rescue (Rescue from Height)
72%
24%
4%
Elevator Rescue
64%
28%
8%
Water Rescue
60%
30%
10%
Search and Rescue (Missing Person)
52%
30%
19%
Yes
Not Sure
No


Services: Hazardous
Hazardous Material Leak or Spill
63%
24%
14%
Fuel Spill or Fuel Odor
61%
26%
13%
Gas Leak or Gas Odor
56%
27%
18%
Electrical Hazards (Power Lines, Power Poles)
50%
27%
22%
Suspicious Package/Explosives
35%
32%
33%
Bomb Threat
32%
31%
37%
Yes
Not Sure
No



High angle rope rescue, trench and confined space rescue, and watercraft distress are all low volume incidents. Inability to respond quickly to these incidents results in poor outcomes. In addition, these incident types require expensive equipment and ongoing training to provide safe and effective response. Other incident types such as boater assistance (many of which relate to running out of fuel), citizen assistance for vehicle or building lockout or animal rescue are also questionable. It is recommended that Parkland County discontinue direct provision of responses to these incident types. There are opportunities to contract service provision for these to other jurisdictions or delegate to non-profit agencies such as Parkland Search and Rescue. In these cases, the County's role would be limited to dispatch and facilitation.

6.3 Staffing

Proposed Council Policy Statement:

C.1 Parkland County will rely on on-call and part-time Firefighters to the maximum extent that permits achievement of its service level targets. Where reliance on on-call or part-time staffing will result in slower than targeted response times and capacities, full-time Firefighters will be employed.

Administration Goals:

C.1.1 Within three years, increase response capacity in the Acheson Station by introducing two platoons of four in-station (full-time or part-time) Firefighters (10 FTEs in total, including casual replacements) on day shifts Monday through Sunday and platoons of standby Firefighters for evening coverage.

C.1.2 Within three years, in the Parkland Village Station increase response capacity by introducing one platoon of four standby Firefighters 24/7 in addition to on-call Firefighters.

C.1.3 Within five years, increase response capacity in all areas by adding one platoon of four in-station (full-time or part-time) Firefighters, stationed as centrally as possible within the County.

C.1.4 Within five years, increase response capacity in Acheson Station by introducing two platoons of four in-station (full-time or part-time) Firefighters (10 FTEs in total, including casual replacements) on night shifts and increasing the size of day shift platoons on weekdays by two full-time Firefighters (4 FTEs in total) and two standby Firefighters.

Justification

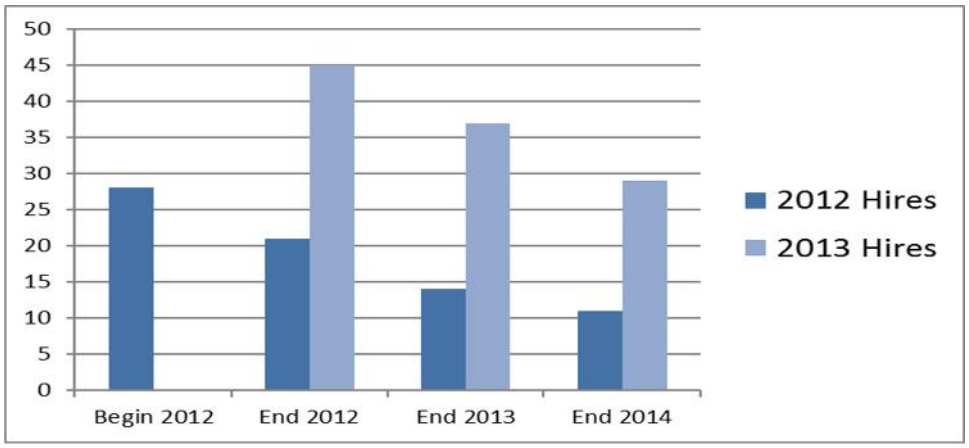
A discussion about staffing in Fire Services would benefit from a clear understanding of terms. In this Master Plan the following terminology and definitions are used:

- Volunteer Firefighter – a Firefighter who responds to events only when paged, but receives no remuneration for his/her time in responses or training. Parkland County, as with most jurisdictions, has no volunteers, as all Firefighters are paid to a greater or lesser extent.
- On-call or Paid-on-Call Firefighter – a Firefighter who responds to events only when paged, and receives an hourly wage for his/her time in responses or training.
- Standby Firefighter – a Firefighter who is paid additionally to guarantee his/her response to pages to respond. Standby Firefighters are not required to be in the fire station during standby shifts. Typical pay for standby shift is about 10% of the rate of a full shift.
- Part-time Firefighter – a Firefighter who is required to be in-station during shifts, but is not a full-time Firefighter. Part-time Firefighters are paid for the entire shift.
- Full-time Firefighter – a Firefighter who works and is paid for full-time hours – typically 40 or 42 hours per week. Sometimes, full-time Firefighters are also paid to be on standby during their off-duty hours.

Parkland County has an on-call staffing model for its Fire/Rescue service. Firefighters are paid to undertake initial and ongoing training, respond to pages for emergency calls, and perform other duties such as equipment checks. Some members are also paid as inspectors and trainers, again for the hours worked.

Department management must work diligently to recruit and train enough on-call staff members so that enough are available in the times of day when they are likely to be needed. Recruitment, and subsequent training of recruits, is a constant activity, as turnover of on-call staff is extremely high, as is illustrated in the figure below for 2012 and 2013. Of 28 Firefighters recruited in 2012, only 11 remained in 2014. Of 45 recruited in 2013, only 29 remained at the end of 2014. Retention is a more significant problem in Acheson and Parkland Village; in Wabamun, Seba and Tomahawk, recruitment of new members of a larger issue.

Exhibit 20 – Firefighter Retention for 2012 and 2013 Hires

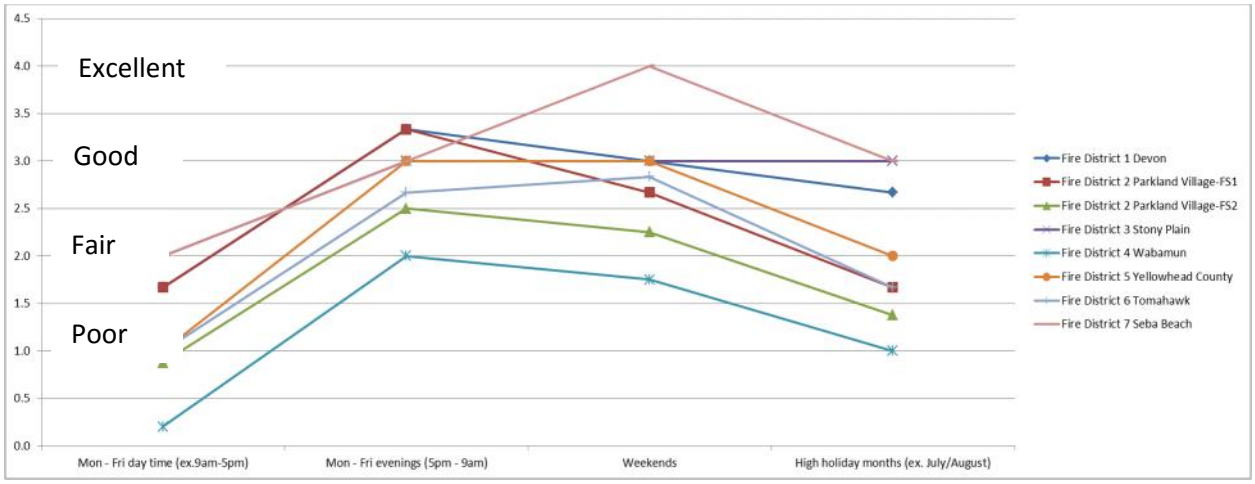


Although the turnover rate for Parkland County is very high, this is a common, although not universal, phenomenon among on-call fire departments and among many other organizations that rely on volunteers. The Alberta Fire Chiefs Association has established a committee of members to identify leading practices in recruitment and retention, whose findings will influence practices in implementing this Master Plan.

Notwithstanding an improved record in recruitment and retention, it is not possible for on-call staffing to be able to meet the recommended service level targets as the time taken for on-call Firefighters to muster to the station is too great. Other models must be implemented to reach ten-minute response time targets.

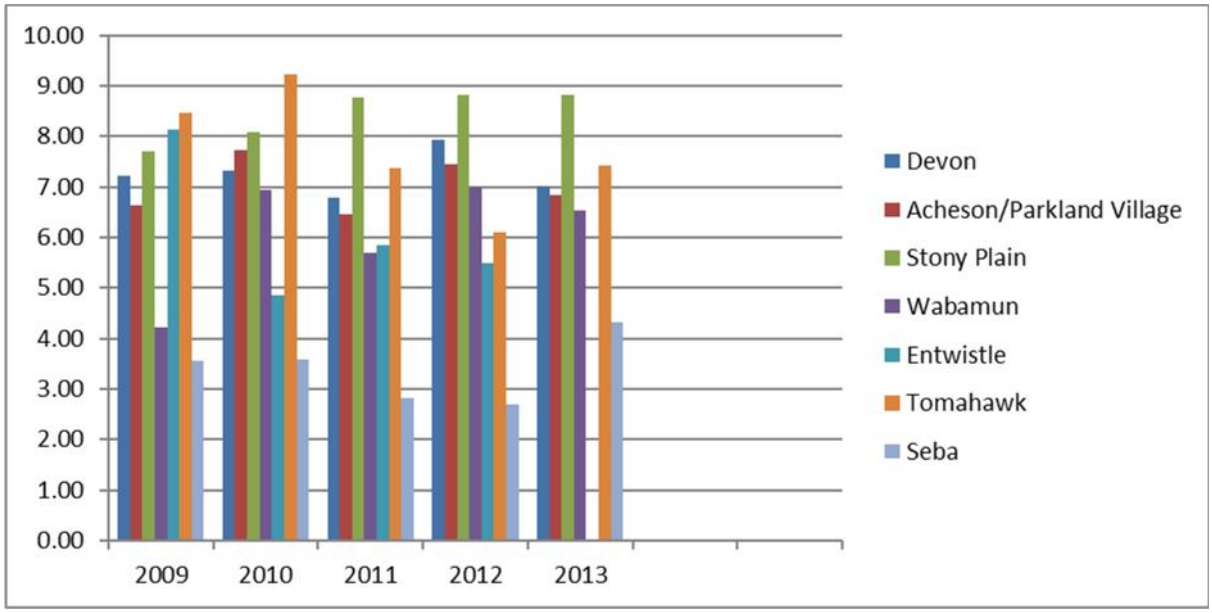
Most fire/rescue calls occur from 7 a.m. to 9 p.m., so the availability of on-call staff is an important operational consideration. Yet members surveyed stated their availability was restricted during those hours due to working too far away from the fire station and employers who are unwilling to release Firefighters to respond.

Exhibit 21 – Firefighter Availability



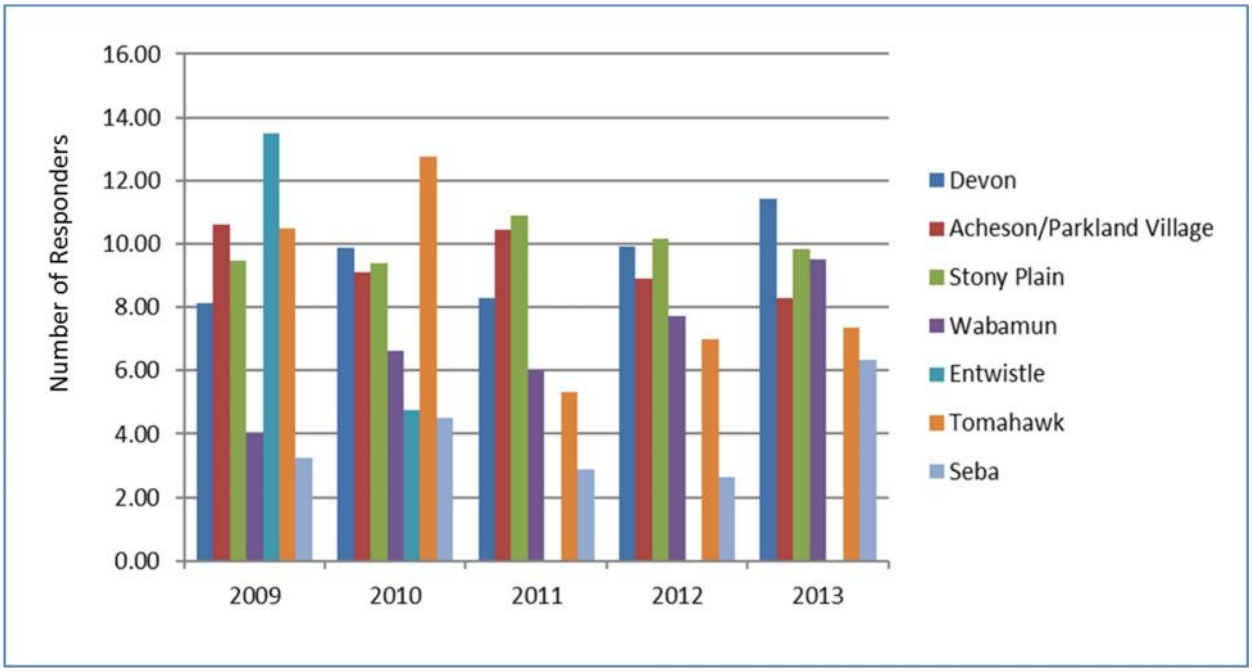
The combination of member turnover and low periods of availability impact the number of Firefighters who respond to pages, as shown below. While the minimum staffing for a first engine is four Firefighters, the total response to structure fires should be at least 15. As is seen, sometimes there are insufficient numbers of Firefighters responding to undertake an effective response. In particular, Seba Beach station responses have been very low in the past, although this is improving.

Exhibit 22 – Firefighter Average Turnout to All Events, by District



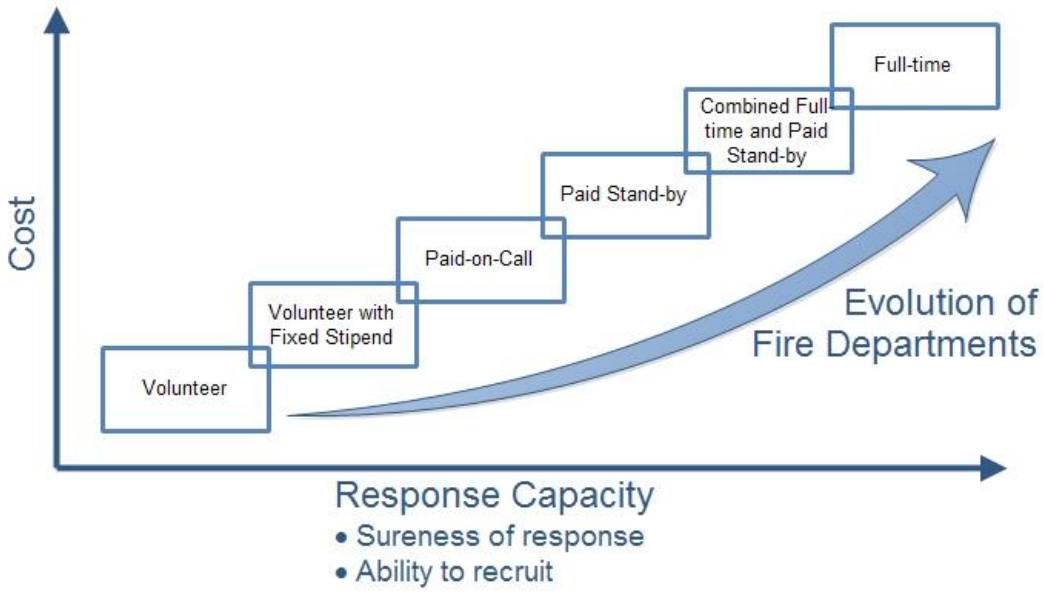
2013 data for Entwistle is not available.

Exhibit 23 – Average Turnout to Structure Fires, by District



The options for staffing of fire departments as summarized in the following graphic.

Exhibit 24 – Evolution of Fire Staffing Models



Traditionally small urban and rural fire departments relied on pure volunteers who, as a community service, trained and answered pages if they were able. As the requirements for higher levels of training and the number of calls responded to increased, volunteer commitment or capability to respond to

pages can wane, and recruitment can become more difficult as potential recruits are wary of the time commitment required. Departments most commonly responded to these challenges by applying some form of fixed stipend as an incentive to new recruits and as recognition of members' efforts. As long as recruitment and response numbers are adequate, there is no reason to change.

However, if recruitment and turnout become problems for volunteers, regardless of the stipend paid, the next model pays members for actual time spent responding, training and performing other necessary duties. This is the model that is used throughout Parkland County. It is satisfactory in many instances, but where sufficient numbers of Firefighters are not available at certain times (as is shown for Parkland County in the Exhibits above), or where it has not been possible to recruit and retain large enough numbers to ensure adequate response capacity for the service level to be provided (as will be the case in Parkland County with the recommended service levels), another choice is to deploy a model where some members are paid to stand-by, obligating standby Firefighters to respond if paged, thus decreasing turnout times and increasing number of responders. Throughout this Master Plan, this is referred to as a part-time staffing model.

Standby can be used selectively, to improve response capacity during weekdays, for example. It does require a sufficient incentive for Firefighters to commit. Where recruitment allows for large staffing complements, the standby incentive can be as low as a few dollars per day. Some on-call departments with large number of members assign Firefighters to platoons which rotate standby duty. Given Parkland's recruitment and retention record, this does not appear feasible. In fact, there is a risk that Parkland may experience difficulty in recruiting Firefighters willing or able to accept standby. For instance, some existing members work at a distance to the fire stations where they serve and can not commit to weekday standby. However, part-time staffing is attractive as being lower cost than full-time models, and this model is recommended at least as a trial.

If it is not possible to recruit sufficient numbers of standby Firefighters, or where service level requires that Firefighters be in-station to eliminate muster time, the only remaining staffing option is full-time. This is also the most expensive option. It can be estimated that a full-time Firefighter's costs, including salary and benefits at competitive levels for this market, coupled with training and personal protective equipment, increase costs to over $125,000 per year. An engine company of four Firefighters would cost $500,000, providing 44 hours per week coverage. Four platoons are needed to staff an engine company 24 hours per day, seven days per week, at a cost of more than $2 million annually.

Attempting to reduce total cost burden, it is recommended that full-time staffing only be used in Acheson Station, during day shifts. Only if sufficient part-time Firefighters cannot be recruited to provide needed coverage nights, full-time staffing should be extended to nights.

For Parkland Village Station, it is recommended that the County recruit one part-time engine company for each shift (for a total of 16), to provide the first-out engine response needed for the recommended service level.

The staffing recommendations are designed to phase in the costs of full-time Firefighters to avoid extremely large budget shocks.

6.4 Training

Proposed Council Policy Statement:

D.1 Parkland County will invest in training for its Firefighters, so that all Firefighters will be trained to provide the level of services approved by Council. Progressive training will be provided to ensure a full capacity of competencies among Firefighters and Officers, to based on recognized standards. Ongoing training will be provided to ensure job related competencies are maintained.

Administration Goals:

D.1.1 Develop a training program, based on NFPA programs, that match the services and service levels provided by Parkland County.

D.1.2 Develop applicable training standards and provide progressive training to ensure competencies in all services provided among Firefighters and Officers. (Ongoing)

D.1.2 Identify training ground needs and explore opportunities to share training grounds (existing or new) with Stony Plain, Spruce Grove and/or Devon.

Justification

Firefighting and rescue operations have benefited from advances in the knowledge of fire behaviour, equipment improvements and standards and from improved practices. Meanwhile there is increased emphasis on Firefighter safety, stipulated in the Alberta Occupational Health and Safety Code of Practice for Firefighters, which requires that municipal employers train Firefighters (implicitly, to a defendable standard) to recognize the hazards inherent in an emergency scene and take steps to mitigate the dangers. The most widely recognized training regime for fire/rescue is the NFPA program, which has separate programs for Firefighters and progressive training for Lieutenants, Captains, Deputy Chiefs and Chiefs covering all aspects of their jobs. This is leading training practice for formal education.

However, NFPA 1001 Levels 1 and 2 training for Firefighters is based on an assumed scope of services which is different than what Parkland County currently provides or than is proposed in this Master Plan. For instance, the level of Dangerous Goods training is beyond the services that Parkland County Fire Service directly provides; but NFPA courses are deficient in providing training dealing with hybrid vehicle fires, wildland fires and blue card command. Training beyond needed levels is both costly and unnecessarily increases the on-call Firefighters' time commitment. It is possible to select specific modules from NFPA or other training programs which more closely match the actual duties that Firefighters and Officers perform.

British Columbia has recognized the limitations of NFPA training and has adopted a "Playbook" which trains Firefighters to three different levels, using a syllabus and materials extracted from NFPA and other sources.

6.5 Partnerships

Proposed Council Policy Statement:

E.1 Parkland County will collaborate with neighbouring municipalities to ensure effectiveness, efficiency, economy and equity in its fire/rescue services, sharing capacity, resources, expertise and costs and based on the principles of equitable sharing of benefits and risks, sharing of costs based on benefits received, communication and sharing of information regarding each partner's evolving needs and commitment to cooperation and consultation in decision-making.

Administration Goals:

E.1.1 Within one year, negotiate a new service agreement with Yellowhead County.
E.1.2 Within three years, update other existing fee for service agreements to ensure they reflect leading practice.
E.1.3 Assume leadership in exploring future options to provide more cost effective services through a unified regional fire/rescue service, possibly to include Stony Plain, Spruce Grove and all municipalities within or on the County's boundaries. (Ongoing)

Justification

Parkland County has relied on service agreements with the Towns of Devon and Stony Plain and Yellowhead County to provide coverage for all areas of the County. Formerly, there was an agreement with the City of Spruce Grove to provide coverage for Parkland Village, but this agreement ended when Spruce Grove increased fees for service.

Late in the process of developing this Master Plan it was learned that Yellowhead County has introduced full-time Firefighters at its Evansburg Station (serving District 5, but also being simultaneously alarmed for all calls for Districts 5-7), as Yellowhead County experiences the same member recruitment and availability challenges as Parkland is facing. Yellowhead County is also undertaking construction of a new station to replace the one at Evansburg. If Parkland County extends its agreement for 50% sharing of capital and operating costs, the new station will be located at Evansburg. Otherwise, the new station may be built in Wildwood, 20 km westward, and Yellowhead County will no longer provide service to District 5. In anticipation of these changes, early in 2016 Yellowhead County provided the required 12-month notice that it will end the current agreement. Parkland County must now either negotiate a new agreement with Yellowhead County or determine how service will be delivered in Districts 4 (Wabamun) though 7. Negotiation will likely extend to the remainder of 2016. This situation provides an example of how partnerships in service delivery can be strained by evolving and sometimes diverging needs of the partners.

There is wide recognition in the County Administration, among service partners, and within the broader fire/rescue industry that independent small fire departments are cost prohibitive compared to scale economies that can be provided through more regional service delivery models. While existing service

contracting has provided acceptable service delivery and cost effectiveness, there are opportunities to do even better. A unified regional fire service (one department) would provide opportunities to:

- Have a leaner management structure than the total of multiple distinct departments, while providing broader managerial capacity and more effective management systems than each department can currently afford;
- Provide opportunities to optimize station locations to improve overall response coverage;
- Reduce apparatus duplication;
- Overcome issues of each municipality having different priorities and preferred timelines for joint initiatives which can constrain effective service sharing;
- Reduce the ongoing effort needed to negotiate and maintain multiple service agreements.

There are also disadvantages of a regional fire service:

- There is less direct control by the council of each participating municipality;
- There can be a dissociation of the service from the community as a regional service provider is perceived as being very different from the local government; and
- If administrative support services are provided within the arms' length agency, they may be less efficient as they duplicate previous services.

The path to a regional service delivery model requires that willing partners establish trust and goodwill at the council, senior management and operational levels, mutually develop goals and an implementation plan. This requires considerable effort and time. The potential benefits of this are such that the senior administration of Parkland County should begin discussions with neighbouring municipalities to gauge interest and begin this process.

In the period before a regional service model can be implemented, Parkland County must continue to rely on existing partnerships. The County maintains agreements with neighbouring municipalities and First Nations that fall into a number of distinct categories:

- Other parties provide service to County residents: Stony Plain, Yellowhead County, and Devon;
- County-managed departments provide first level services to other jurisdictions: Wabamun, Seba Beach, Summer Villages of Silver Sands, Betula Beach, Kapasiwin, Lakeview, Spring Lake (Edmonton Beach), and Point Alison.
- One-way fee for service agreements to provide assistance to other jurisdictions when requested: Enoch Band and Paul First Nation.
- Mutual Aid agreements (to jurisdictions beyond Parkland County's boundaries, and to Spruce Grove: Alberta Beach, Brazeau County, C-REPP Agreement, Drayton Valley, Edmonton, Leduc County, Lac Ste. Anne County, Whitecourt and Edson Wildfire Protection Areas, Onoway, Regional Disaster Mutual Aid, Sturgeon County, Tri-Fire Fighting, Brazeau County.

All fire service agreements were reviewed based upon the terms of service that are found in leading practice agreements. In summary, the assessment found:

- All but four are out of date; agreements with Stony Plain, Devon and Yellowhead County are out-of-date and weak compared to leading practice; this is particularly concerning given these partners respond to large portions of the County and handle a large call volume;
- The agreements with Seba and Wabamun are reasonable recent and most closely reflect leading practice; they are the only two agreements that have services described in detail and service levels described;
- There is limited cross training occurs between Parkland County Fire Service and contract service providers;
- There is generally weak description of how joint decision-making is to occur and, in particular, how minor disagreements in practice are to be resolved;
- Few agreements have mechanisms for updating fees and charges. The use of fixed fees or fixed per hour rates results in these rates becoming obsolete as circumstances change and as agreements age; and
- Mutual aid agreements are reasonably standard in terms and conditions, providing for service to be given upon request, and stipulating hourly fees.

A leading practice agreement template has been developed as part of this Master Plan process; Parkland County should attempt to negotiate with partners toward this standard agreement.

6.6 Facilities, Apparatus and Equipment

Proposed Council Policy Statements:

F.1 Parkland County will acquire and maintain fire facilities, apparatus and equipment, based on assessed risks, approved service levels, innovations in firefighting practice, and industry standards for capacities and specifications.

F.2 Assets will be managed and funded to optimize lifecycle costs and meet industry equipment replacement standards.

Administration Goals:

F.1.1 Develop a plan to improve communication systems.

F.1.2 Bring forward information to Council to facilitate decisions on providing service in the Districts 4-7, including options for renewing, replacing or merging stations in Seba, Wabamun and Tomahawk.

F.1.3 Complete an apparatus review and replacement plan.

F.1.4 Identify training facility needs an explore opportunities to share training grounds (existing or new) with Stony Plain, Spruce Grove and/or Devon.

Justification

In 2015, a firm was engaged to assess the condition and functionality of the Wabamun and Seba Beach fire stations, both of which are owned by the respective village/summer village. Both facilities are old, in need of significant repairs and upgrades to meet functional needs. It is anticipated that options and plans will be developed to bring these stations up to needed levels.

Although Parkland Village and Tomahawk stations are not being assessed at this time, the Fire Service should consider review to ensure they will continue to provide needed functionality.

In the western portion of the County served by stations at Wabamun, Seba, Tomahawk and Evansburg, Council will need to assess the options it has for providing service, including impacts on service levels and costs, in the face of complex factors:

- Call volumes are low among all stations, averaging less than 200 incidents per year in total, half of which are in Wabamun District;
- 40% of incidents are motor vehicle accidents mostly along primary and secondary highways; there are very few structure fires;
- Distances are large and response times long;
- Ability of the districts to recruit sufficient numbers of members is limited, as the population is static and aging in rural areas;
- Turnout of members is low;
- Expected near- and mid-term costs of facility renewal and equipment replacement are substantial.

County Council will need to weigh all of these factors against expectations of the community in this area and make the choices necessary to go forward.

The radio communication system is at end of expected life; Officers and Firefighters noted serious functional deficiencies. The County's Emergency Communication Centre (ECC) is reviewing the radio communication infrastructure it uses to communicate to its client fire departments, and is anticipating significant investments will be needed. But the scope of the ECC review does not include the operational needs of Parkland County Fire Service, nor the pending provincial Alberta First Responders Radio Communication System (AFRRCS) implementation and standards. Extending the terms of reference of the ECC review will permit development of a long term solution that will meet the needs of ECC as service provider and the Fire Service as recipient.

Part of ongoing training is practice that simulates, in a controlled manner, actual fire scenes. Training grounds that have a large area, facilities for briefing and debriefing, and training props (buildings, vehicles, etc. that can be burned in a controlled setting) are needed. There are scale economies in establishing training grounds, and fire departments readily share these, with the constraint that small departments with no back-up apparatus are hesitant to remove apparatus and Firefighters from their service area: training facilities must be reasonably close. There are opportunities for Parkland County to join with its service partners and the City of Spruce Grove to develop, build and operate training grounds. This may in fact be a lever toward the regional service delivery goals.

6.7 Management and Organization

Proposed Council Policy Statement:

G.1 Parkland County Fire Service will demonstrate leading management practices in capturing, managing and reporting performance data to support Council's governance role in determining the effectiveness of its policies, as well as to support operational planning and management to inform decision making at those level.

Administration Goals:

G.1.1 Within three years, in conjunction with Information Services and the Emergency Communication Centre, develop an action plan to leverage technology and software to improve analytical and performance measurement capabilities.

G.1.2 Within three years, in conjunction with Corporate Services identify administrative support needs and develop a plan to deploy needed resources. Recognizing the needs for training, human resource management, payroll and quartermaster functions is directly proportional to the number of on-call Firefighters employed, the plan must be flexible to provide sufficient resources so that Officers' can focus on management of the service.

Justification

To fulfill its governance role Council must have information which describes how well the County is influencing its expected outcomes of the Fire Service and how well the Administration has been meeting mandated service levels and complying with Council policies. During the course of data gathering for development of this Master Plan it became evident that the Fire Service is struggling to access and process data into meaningful operational, management and governance measures, due to:

- Lack of rigourous processes for capturing, validating and stewarding data originating from Firefighters or the Emergency Communication Centre;
- Lack of knowledge and experience of existing staff in using the functionality of the FDM technology to manage, analyze and report information;
- Lack of time among Deputy Chiefs to undertake changing any of the above or to use the technology above basic levels.

A plan to overcome these deficiencies must be developed and implemented, enlisting the support of the Emergency Communication Centre and Information Services Department. This plan must include both the hardware and software requirements, processes to capture, validate and manage data and initial and ongoing training of all involved.

The challenges of information and performance reporting are just one example of the deficit in corporate support provided to Fire Services. Other examples include:

- Deputy Chiefs spending time entering payroll for Firefighters;

- Absence of Human Resources support for recruitment and labour management, occupational health and safety, and day-to-day human resources support;
- Deputy Chiefs spending time on the clerical and stores activities of purchasing and supply chain logistics, and quartermaster function;
- Overall lack of administrative support and station and headquarters levels;
- Absence of technology tools at stations and access to County information systems for individual Firefighters.

The lack of administrative support results in Deputy Chiefs fulfilling clerical roles to perform needed activities. This is costly in terms of the hourly cost of performing tasks and in the opportunity costs of impinging on these managers' ability to manage the service.

As administrative support is increased there will be opportunity to realign the portfolio of responsibilities for Deputy Chiefs. At that time, consideration should be given to creating civilian professional positions for on-call recruitment and retention management in addition to the senior officers.

7 Fiscal Management

Proposed Council Policy Statement:

H.1 Parkland County will consider taxation and service fee alternatives so that the increasing costs of the Fire Service are born equitably by the residents and businesses in the County, respecting the nature of the services as both standby and responsive.

Administration Goals:

H1.1. Within three years, bring forward recommendations to Council to implement fees for all services provided by the Fire Service.

Justification

Currently, Fire Services are funded primarily from general revenues, that is, property taxes. Other ongoing sources of revenue are shown below.

Exhibit 25 – Non-tax Revenues

Source	2014 Budget
Fees for services provided to other jurisdictions	
Alberta Transportation	$80,500
Village of Wabamun and Spring Lake; Summer Villages and Enoch First Nation	$46,400
RCMP	$6,420
Sales to Insurance companies	$10,000
Sales of training programs to other jurisdictions	$90,000
Contributions from Wabamun and Seba for equipment replacement	$11,700
Provincial training grants	$32,300

Implementation of the recommendations in this Master Plan will result in additional annual costs exceeding $4 million when all are phased in. While there may be some small adjustments to the above revenue sources within the planning horizon, the County may wish to consider some alternatives to shield general property taxes from the impact of the Fire Master Plan.

Potential new revenue sources include:

Fees could be charged directly to those served for responses:

- Fire suppression;
- False alarms;
- Other rescue (water, confined space, etc.);
- Hazardous materials response.

Charging for any of these responses could be justified in that the events leading to the incident requiring response are preventable. Both the business and householder focus groups strongly urged that the County adopt fees for most, if not all services. Specific comments included:

- Bill insurance companies for responses to fires and motor vehicle collisions, wherever possible.
- The police charge fees for responding to false alarms; the County should, too.
- Be aggressive in charging user fees for all services, aiming for full cost recovery or more.
- How can the County charge fees for fire suppression, when the level of service is so low?

However, the public may feel that their property taxes should pay for these services. Further, if the County can't commit to a specific capacity and timeliness or response, then the value of the service will be diminished and the concept of fees questioned.

Medical first response or Emergency Medical Service assistance could be charged to the recipient of the service, based on the Fire Service's response being faster and higher capacity than that provided by Alberta Health Services and its contractors. The argument can be made that Alberta Health Services downloads the cost of providing fast medical response to municipalities, relying on fire departments to provide patient stabilization and first aid in lieu of faster Emergency Medical Service. Alberta Health Services invoices patients for ambulance service; fire departments that arrive quicker should be able to invoice also.

Inspections required by third parties (initial Alberta Safety Code inspections and those provincial liquor licensing regulation, for example), could be charged to those requiring them.

The Fire Services Master Plan proposes different service levels depending on the risks encountered in each area. With higher risks and service levels comes increased benefit and higher costs. The Municipal Government Act permits municipalities to establish fire protection zones, applying different taxation levels to areas provided with different levels of service.

For both new revenues sources and differential taxation, there is need for debate at Council. The Fire Services is encouraged to engage Council in discussion to provide direction on implementing any of these measures.

8 Performance Measures

Performance Measures

The Community Outcome and Effective Management measures presented in Exhibit 26 are intended to provide Council with information needed for Council to assess achievement of services level targets and their impact on community outcomes.

Measures are also useful for management in that they provide the standards of performance and point out where those standards have or have not been realized. It is then management's responsibility to determine why the level of performance has not met expectations and make adjustments to operations or, if necessary, recommend changes in resource levels or service targets or other policies.

The Employee Satisfaction measures are a management tool to help the CAO and Fire Chief devise the best recruitment and retention strategies to meet the mandated service level. They do not require reporting to Council, but may be used to assess the impact of policy choices.

Exhibit 26 – Fire Service Performance Measures

Community Outcome Measures

Outcomes	Measures	Draft Target Level	Reporting
Freedom from injury or loss of life or property from fire	$ Loss of property Proportion of property saved:lost in each service level zone Fire Underwriters Survey Ratings for each service level zone	Less than rolling 5-year average XX:YY FUS Public Fire Protection Class XX FUS Dwelling Protection Grade XX	To Council, annually
General perception of security	Citizens' perception of County as a safe place to live, from community survey Percentage of citizens and businesses surveyed who are satisfied with the Fire Service.	To be determined >85% are satisfied or very satisfied with Fire Service	To Council, annually
Responsive fire service meeting service target	Number of calls, by type Total response time (dispatch + chute + drive) for first engine within response time target On-call stations: • response 80% of the time • % of calls where minimum staffing target met	Information only >90% of the time TBA minutes 100	To Council, quarterly
Effective Fire/Injury Prevention program	% of planned inspections conducted Number of education/ information messages broadcasted (print) Number of personal education/information encounters (persons contacted)	100% TBD TBD	To Council, quarterly

Effective Management Measures

Outcomes	Measures	Draft Target Level	Reporting
Financially prudent service provision	$ per capita Actual to budget net costs Overtime as % of budget (full-time staff)	$XXX per capita +/- 3% < 8%	To Council, annually
Support municipal strategic directions	Progress on Business Plan initiatives.	TBD	To Council, quarterly
Well trained work force	% of full-time staff who have completed basic Firefighter certification % of full-time staff who have exceeded NFPA 1001 Level 2 training % of full-time staff who have completed NFPA 1002 certification % of part-time staff who have completed NFPA 1002 certification % of full-time staff who have completed NFPA 1021 Level 1 certification	100% 100% >75% >50% >10%	To Executive, annually
Effective recruitment	Recruitment actual to planned Turnover FT/PT	>90% <10% /<25%	To Executive, annually
Staff health and safety	Sickness/injury rates Staff satisfaction as reported via staff survey.	<10 days per 1,000, rolling five-year average <10% somewhat or wholly dissatisfied	To Executive, annually

Operational Management Measures

Outcomes	Measures	Draft Target Level	Reporting
Response times	Response times for each station, by time of day, day of week and location	>90% of the time	Fire Chief, monthly
Dispatch times	Dispatch time within 60 seconds Dispatch time within 106 seconds	>80% of the time >95% of the time	Fire Chief, quarterly
Full-time Firefighter chute time	Time from **receipt of call in station to wheel start is less than 90 seconds**	>90% of the time	Fire Chief, quarterly
Part-time Firefighter Turnout	Muster times for part-time-staffed engines, 90% of the time % of pages each part-time Firefighter attends % of weekly training sessions each part-time Firefighter attends	<10 minutes TBD >75%	Fire Chief, quarterly
Turnover Management	Reasons retirees claim for retirement, independently reported	N/A	To Executive, annually
Full-time Firefighter Training	% of full-time Firefighters certified as: - Trainers - Officers - Investigators - Inspectors	TBD	Fire Chief, annually
Part-time Firefighter Training	% of part-time Firefighters certified as: - Pump operators - Drivers - Certified tanker shuttle operators - Officers - Trainers	TBD	Fire Chief, annually
Equipment Maintenance	% of equipment checks and maintenance occurring as scheduled	100%	Fire Chief, monthly

9 Appendix 1 – Analysis of Service Agreements

9.1 Others Provide Service to Parkland

	Leading Practice	Stony Plain	Devon	Yellowhead
Date		2006	2001	2001
Services	Describes services and service levels	Tier 1 - Primary first alarm response Services provided are listed	Tier 1 - Primary first alarm response Fires, rescue and other incidents normally responded to by Town; County conducts investigations	Tier 1 - Primary first alarm response Yellowhead to administer jointly-funded Fire Department; Fires and other incidents normally responded to by a Fire Department; County conducts investigations
Service area	First response area described and mapped at appropriate scale with secondary responses and mutual aid obligations	Defined service area within the County; contemplates responses to other areas under same terms.	Defined service area within the County contemplates; responses to other areas under same terms.	Defined service area within the County contemplates; responses to other areas under same terms.
Simultaneous calls	Provides basis for triaging	At discretion of Stony Plain commander, based on immediate danger to life and health	At discretion of Devon commander, based on "urgency"	At discretion of Pembina commander, based on "urgency"
Equipment, apparatus and facilities	List shared items	Lists apparatus and equipment owned jointly and separately (to be cost-shared)	Lists apparatus and equipment owned by each	Equal cost sharing
Fees and Shared Costs	Lists fees and the rationale and basis for how	One-time contribution by County to Fire	Fixed annual fee (based on defined cost	Fixed apportionment

	these are derived; lists shared costs and rationale and basis for how costs are shared; this provides a mechanism for updating costs throughout the term of the agreement	Hall; fixed annual fee for most cost objects; fixed apportionment of other cost objects; fixed fee per apparatus deployed	objects); flat fee for annual standby period; fixed fee per apparatus deployed;	of capital and operating costs
Revenues	Describes bases for revenue sharing	Fixed apportionment of revenues received	Fixed apportionment of revenues received	Fixed apportionment of revenues
Invoicing	Describe frequency	Quarterly	Quarterly	Annual
Capital Costs	List capital assets to be shared and how costs for maintenance, refurbishment replacement or renewal will be shared; a 10-year capital plan in place and updated; funding of capital plan is in place	List shared capital assets and apportionment of costs for maintenance, refurbishment replacement or renewal; a 10-year capital plan in place and updated; replacement reserves and capital plan established. County may contribute to capital upgrades of Fire Hall	Contributions to apparatus replacement reserve	Contributions to apparatus replacement reserve
Governance/ responsibility	Who governs and who administers service; influence of each party on decisions; how SOPs determined	Town to develop SOPs in consultation with County; Town maintains jointly owned apparatus and equipment, in consultation with County. Capital	Town maintains jointly owned apparatus and equipment, in consultation with County.	Joint development of SOPs; Yellowhead maintains jointly owned apparatus and equipment, in consultation with County.

		expenditures require joint approval		
On scene command	Common SOPs and Incident Command System; joint training	County to have authority over response to events in the County;	Not mentioned	Parkland Chief has overall command of incidents in the County
Dispute resolution	Mechanism for resolving disputes administratively	Referred to CAOs	Not mentioned	Referred to CAOs
Termination provisions	Notice; how joint assets will be disposed and proceeds shared	12 months' notification terms for disposition of jointly owned apparatus, equipment and repayment of County contribution to facilities.	12 months' notification; terms for disposition of jointly owned apparatus	12 months' notification
Liability, indemnification and insurance	In place	Mutual indemnification; County insures jointly owned apparatus and equipment; Town insures Firefighters	County indemnifies Town; County insures jointly owned apparatus (if any)	Equal sharing of liability for costs not covered by individual insurance; Yellowhead insures jointly owned apparatus and equipment; Yellowhead insures Firefighters
Amendments and renewal	Provides date for agreement renewal and mechanism for dealing with interim amendments	Five year term of agreement with continuation provisions; Annual fee increases based on cost of living	Annual updating	May be amended from time to time

9.2 County Managed Department Provides Services to Others

	Leading Practice	Wabamun	SV of Seba Beach	Betula Beach
Date		2011	2011	1993
Population Served		Wabamun-661 Parkland-3,805	Seba-143 Parkland-1,226	Seasonal
Services	Describes services and service levels	Tier 1 - Primary first alarm response Lists services and NFPA 1720 response times and capacities	Tier 1 - Primary first alarm response Lists services and NFPA 1720 response times and capacities	Tier 1 - Primary first alarm response Fire only; at sole discretion of Parkland Chief
Service area	First response area described and mapped at appropriate scale with secondary responses and mutual aid obligations	Primary response area described plus additional areas, including mutual aid	Not mentioned	SV boundaries
Simultaneous calls	Provides basis for triaging	Provides basis for triaging	Provides basis for triaging	At discretion of Parkland Chief
Equipment, apparatus and facilities	List shared items	Lists shared apparatus, equipment and facility	Lists shared apparatus, equipment and facility	At discretion of Parkland Chief
Fees and Shared Costs	Lists fees and the rationale and basis for how these are derived; lists shared costs and rationale and basis for how costs are shared; this provides a mechanism for updating costs throughout the term of the agreement	Lists expense types to be shared; basis for how costs are shared (rolling 5-year average of number of responses);	Cost sharing ratio; basis for determining facility operating cost sharing	Formula for apportioning net costs, fixed annually.

	Leading Practice	Wabamun	SV of Seba Beach	Betula Beach
Revenues	Describes bases for revenue sharing	Describes basis for how revenues will be split	Not mentioned	Not mentioned
Invoicing	Describe frequency	Quarterly	Quarterly	Annual
Capital Costs	List capital assets to be shared and how costs for maintenance, refurbishment replacement or renewal will be shared; a 10-year capital plan in place and updated; funding of capital plan is in place	Facilities to be negotiated as needed; capital equipment reserve established and funding formula set; a 10-year capital plan in place and updated; funding of capital plan is in place	Additional equipment to be negotiated; capital equipment reserve established and funding formula set; a 10-year capital plan in place and updated; funding of capital plan is in place	Not mentioned
Governance/ responsibility	Who governs and who administers service; influence of each party on decisions; how SOPs determined	Parkland provides direction and administration on fee for service basis	Parkland provides direction and administration on fee for service basis	Not mentioned
On scene command	Common SOPs and Incident Command System; joint training	Parkland to establish SOGs	Parkland to establish SOGs	12 months' notification of termination
Dispute resolution	Mechanism for resolving disputes administratively	Dealt with by respective managers	Dealt with by respective managers	Parkland indemnified; no other liability or insurance mentioned
Termination provisions	Notice; how joint assets will be disposed and proceeds shared	18 months' notification of termination and dissolution of shared assets	18 months' notification of termination and dissolution of shared assets	
Liability, indemnification and insurance	In place	Parkland indemnified	Parkland indemnified	

	Leading Practice	Wabamun	SV of Seba Beach	Betula Beach
Amendments and renewal	Provides date for agreement renewal and mechanism for dealing with interim amendments	Provides end date and for amendment as needed	Not mentioned	