Municipality Of Chatham-Kent
Community Development
Fire and Emergency Services

To: Mayor and Members of Council

From: Ken Stuebing, Fire Paramedic Chief

Date: May 9, 2016

Subject: Chatham-Kent Fire and Emergency Services Service Review

Recommendation

It is recommended that:

1) Council direct staff to negotiate Model C with the respective parties and report back to Council for final approval on proceeding with Model A, B or C.

Background

Council has directed administration to develop a Service Sustainability Review Process (SSRP). The intent of the SSRP is to examine CK services with the intent to:
   a) determine what services should be delivered by CK and at what level those services should be delivered
   b) identify potential improvements to effectiveness and efficiency in the delivery of our services
   c) develop plans to achieve financial sustainability for the services we ultimately deliver.

CKFES is responsible to Council for the delivery of Fire Services, Emergency Medical Services (land ambulance) and Emergency Management. The current EMS contract is set to expire on December 31, 2016. It was determined that the CKFES SSRP should coincide with this time frame to provide Council with as much information and as many options as possible for consideration.

The objective of the Chatham-Kent Fire and Emergency Services (CKFES) SSRP is to provide a thorough analysis of existing Fire and EMS service delivery models, assess viable options and then to provide Council with the options and a recommendation regarding the future of Fire and EMS service delivery within the Municipality of Chatham-Kent (CK). The SSRP document concludes with a recommendation for Model C, a cost effective and efficient emergency response service delivery model that will provide both an improved level of service, initial cost savings and financial and service level sustainability for the Municipality into the foreseeable future.

The responsibility for the provision of land ambulance rests with the upper tier, regional government or designated delivery agent. As such, the Municipality of Chatham-Kent must provide an ambulance service to the region (Chatham-Kent).

Currently, the land ambulance service in Chatham-Kent is being provided by an external contracted provider. In 2000, the Province downloaded the responsibility for land ambulance
services. The Municipality has contracted out the provision of Land Ambulance through multiple Requests for Proposal and service contract negotiations. Since the download of EMS to upper-tier Municipalities, all other Municipalities, to CKFES knowledge, have moved to a direct delivery model for EMS, save and except Chatham-Kent, Elgin and a few small hospital base services.

At the June 22, 2015 meeting, Council directed administration to enter into discussions with Medavie EMS to explore the option to extend the contract. Administration to research all options for Land Ambulance and to provide all options for the provision of land ambulance services upon expiration of the present contract for Council’s consideration.

Comments

The Request for Interest was issued in July 2015. Only one response was received which was from the current contractor, Medavie EMS.

A Service Review Team (SRT) was assembled to work on the CKFES SSRP and provide options for Council’s consideration. After more than two years of analysis, the SRT is very confident in the costing of both direct delivery models.

The recommendation contained in this report is no reflection on the good service provided to the Municipality by Medavie EMS for the past five years. Medavie EMS has met the obligations of the service agreement and all standards set out by the Ministry of Health and Long Term Care (MOHLTC), Emergency Health Services branch.

Level of Service

When the provision of land ambulance service was instituted by Chatham-Kent in December 2000, the level of service consisted of a 24-hour staffed base in Chatham and 18-hour staffed bases in Bothwell, Ridgetown, Tilbury and Wallaceburg. The paramedics were, and still are, Primary Care Paramedics.

Over the last 16 years, with Council’s approval, all bases have been enhanced to 24-hour staffed bases, the Bothwell base was moved to Thamesville, and an Emergency Response Unit established in Blenheim.

The Municipality of Chatham-Kent will continue to own or rent all EMS bases, own all EMS ambulances and vehicles, and own all EMS equipment.

Internal versus External Service Delivery

A comprehensive cost analysis for direct delivery of EMS was completed before the costing proposal details from Medavie EMS was reviewed.

A fully blended composite Fire and EMS service delivery model is being recommended.
Council Directions

The recommendation in this report supports the following Council Directions:

☐ Jobs: Everyone in Chatham-Kent who wants to work is able to work in meaningful employment
☐ People: Chatham-Kent is a welcoming community where people choose to live, learn, work, and play
☐ Health: Chatham-Kent is a healthy, active, safe, accessible community within a healthy natural and built environment
☐ Financial Sustainability: The Corporation of the Municipality of Chatham-Kent is financially sustainable
☒ Has the potential to support all Council Directions
☐ Neutral issues (does not support negatively or positively)

Consultation

Budget and Performance Services interpreted and provided financial information and analyses for this report. Human Resources and Organizational Development was consulted for Human Resources staffing costs contained in this report. Legal Services was consulted and provided input on the RFP documents, evaluation process and legal issues. EMT has reviewed and supports the SRT analysis and recommendations as the most sustainable model for Council’s consideration.

Financial Implications

Financial Implications are contingent upon Council decisions on Model A, B or C and the service options chosen. The specific costing of these models and options can be reviewed in the CKFES Service Review document on Table 10 – Projected Cost.

There are currently no financial implications until a final decision on a model and option are chosen.

Prepared by: Reviewed by:

____________________________  ______________________________
Ken Stuebing, BHSc, CCP(f)    Don Shropshire
Fire Paramedic Chief          Chief Administrative Officer

Attachment: CKFES Service Review

C:
Budget & Performance Analyst, Budget and Performance Services
Director, Human Resources & Organizational Development
Chief Legal Officer, Legislative Services
General Manager, Community Development

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Executive Summary

The objective of the Chatham-Kent Fire and Emergency Services (CKFES) Service Review is to provide a thorough analysis of existing Fire and EMS service delivery models, assess viable options and then to provide Council with the options and a recommendation regarding the future of Fire and EMS service delivery within the Municipality of Chatham-Kent (CK). This document concludes with a recommendation for a cost effective and efficient emergency response service delivery model that will provide both an improved level of service, initial cost savings and financial and service level sustainability for the Municipality into the foreseeable future.

The current Land Ambulance Service Contract that provides the framework for delivery of Emergency Medical Services (EMS) has been in effect since 2012 and expires or becomes due for renewal on December 31, 2016. This provides a logical opportunity for an in-depth service review.

The following report outlines the findings of the Service Review Team (SRT) following more than thirty months of observation, consultation, research, and analysis pertaining to resource management, service delivery, and cost containment. The quality improvement process that is legislated by the Ministry of Health and Long-Term Care (MOHLTC) was incorporated into the proposal and will consider the unique conditions that exist within CK.

As stipulated in the Ambulance Act, the Municipality is responsible for the provision of land ambulance services in CK, and is entitled to receive a subsidy of up to 50% from the Province, of validated costs as outlined in a Council approved budget. It must provide a level of EMS service that meets the needs of all persons within the Municipality. It is also responsible for selecting the persons to provide land ambulance services and then enter into agreements as necessary to properly manage and operate land ambulance services (Ambulance Act, 6.1 & 6.8).

A Service Review Team (SRT) was established in 2013 to review the services provided by CKFES. The SRT began the analysis with the hypothesis that a fully blended, composite Fire and EMS service would provide the most cost effective and sustainable service delivery model, while at the same time, providing enhanced levels of service for both EMS and Fire in the community.

The scope of the service review included:

- An analysis of previous service reviews including the 2007 Master Fire Plan and the Office of the Fire Marshal Service Assessments
- An environmental scan of current and future trends and challenges facing Fire and EMS services
- An assessment of the current Fire and EMS service delivery models across North America
- A community risk assessment
- A review of alternative service delivery models that could be implemented within CK
- Identification of internal and external stakeholders and assessment on potential impacts
- An analysis of key performance indicators for Fire and EMS services
- A financial analysis of the most viable service delivery alternatives
- Validation of the model recommended
• An extensive review by the SRT, Legal Services and Human Resources and Organizational Development (HROD) of the labour relations issues contained within each model
• A Legal Services review of legislative challenges
• An Executive Management Team (EMT) assessment of the service review options

It is recommended that:

1) Council direct staff to negotiate Model C with the respective parties and report back to Council for final approval on proceeding with Model A, B or C.

The implementation of the proposed recommendation aligns with the Municipality’s strategic goals and guiding statements of jobs, people, health and financial sustainability. Specifically, the recommendation in this proposal improves the financial sustainability of emergency services for the foreseeable future; enhances the health and wellbeing of the community; improves staff health, safety and wellbeing; advances the attractiveness of CK as a desirable place to live and to locate a business; and enhances the Municipality’s ability to retain and attract high-performing employees.

In other jurisdictions outside of Ontario, a variety of Fire and EMS service delivery models have been implemented. These include:

• the total administrative and operational separation of the two services;
• cohousing\(^1\) or co-locating\(^2\) the two services in joint facilities;
• work-sharing agreements whereby Fire and EMS Unions agree to share work;
• a combined administration of the two separate working groups;
• or fully integrating Fire and EMS into one organization so firefighters and paramedics work together on a fire call, sent in a fire truck, then work together on a medical call, sent in an Ambulance to create sensible synergies and efficiencies;

The continued success of emergency service delivery within Chatham-Kent relies on its ability to first identify current and future trends, challenges and service requirements and then determine ways to effectively and efficiently meet those requirements, while considering the effects on the stakeholders. This service review included looking at all options above regarding the service delivery model for Fire and EMS.

The ever increasing costs to the taxpayer of maintaining separate Fire and EMS service delivery models that meet the needs and circumstances of the community are difficult to sustain. As a single-tier municipality that currently contracts land ambulance services with a third-party provider, CK has a unique opportunity to fully integrate the two Fire and EMS service delivery models into one efficient and effective service entity. The adoption of the proposed recommendation will increase the level of emergency response services provided to the community, reduce emergency response times, enhance emergency responder safety and wellbeing, increase the number of proactive public safety education activities, community paramedicine, solidify the use of volunteers for emergency response throughout all of CK (while continuing to provide the service in the communities they currently serve, volunteers will provide the capacity to respond to peak demands in a fully blended, composite Fire and EMS service),

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\(^1\) Cohousing: when two independent services share work locations.
\(^2\) Co-locating: when two independent services are located in the same location with completely independent work sites.
and enhance Fire and EMS prevention programming capabilities at the most financially sustainable level.

Moreover, emergency services staff will be more effectively utilized and thereby provide the Municipality with far more “bang” for its emergency services dollar.
Chatham-Kent Fire and Emergency Services Comprehensive Service Review

Stakeholders

The stakeholders for the provision of EMS impacted by this proposal are both internal and external to the Municipality.

The internal stakeholders include Council and all municipal departments and divisions (not just CKFES), as well as all associated committees.

The external stakeholders impacted by this proposal include: all residents, visitors, and businesses located within the Municipality, the Province of Ontario, the Southwestern Ontario Base Hospital, the respective bargaining units for each organization, the Ontario Association of Fire Chiefs (OAFC), the Ontario Professional Firefighters Associations (OPFFA), AMO, the Ontario Association of Paramedic Chiefs (OAPC), the Central Ambulance Communication Centres (CACC), and the Chatham-Kent Police Services. The greatest impact will be on those customers that utilize Fire and EMS services and most significantly, CK taxpayers.

The business requirements of each of the internal stakeholders relative to this project are outlined in Table 1 as it pertains to EMS.

TABLE 1 - STAKEHOLDERS & BUSINESS REQUIREMENTS

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Business Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Province</td>
<td>• Establishes standards for management, operation and use of ambulances</td>
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<td></td>
<td>• Ensures that there is a balanced &amp; integrated system of land ambulances</td>
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<td></td>
<td>• Monitors, inspects &amp; evaluates EMS Services</td>
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<td></td>
<td>• Establishes regions for land ambulance coverage</td>
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<td>• Compels hospital participation &amp; designates hospitals as base hospitals</td>
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<td></td>
<td>• Provides and regulates communications centres</td>
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<td></td>
<td>• Provides a subsidy of $0.50 per dollar for Municipal requirements</td>
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<td>CKFES is required to report to the Province on:</td>
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<tr>
<td></td>
<td>• Compliance with land ambulance Response Time Standards</td>
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<td></td>
<td>• Annual EMS Budget (Financial Information Report)</td>
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<td>• Peer Review every 3 years</td>
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<td></td>
<td>• Provides a funding subsidy to the Municipality for EMS services</td>
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<td>Southwest Ontario Regional Base Hospital (London)</td>
<td>• Coordinates the efforts of the local base hospital</td>
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<td></td>
<td>○ Sets policy</td>
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<td></td>
<td>○ Reviews proposals for new programs</td>
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<tr>
<td>Stakeholders</td>
<td>Business Responsibilities</td>
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<tr>
<td></td>
<td>o Liaises with the Province &amp; other Regional Base Hospitals</td>
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<td></td>
<td>o Sets standards for paramedics</td>
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<td></td>
<td>o Reviews a sampling of Electronic Patient Care Reports (EPCRs)</td>
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<tr>
<td>Local Base Hospital</td>
<td>• Reviews a sampling of EPCRs</td>
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<td></td>
<td>• Conducts annual paramedic training</td>
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<td>• Delegates and certifies paramedics</td>
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<td>• Conducts annual paramedic recertification</td>
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<td>• Investigates or reviews paramedic performance</td>
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<td></td>
<td>• Reviews paramedic self-disclosures</td>
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<tr>
<td>Wallaceburg CACC</td>
<td>• Provides EMS Dispatch Services for CK and Elgin County EMS</td>
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<td></td>
<td>• Houses the back-up Dispatch Centre for Police and Fire</td>
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<td>CK Police Services</td>
<td>• Provides emergency 9-1-1 call intake and interrogation services</td>
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<tr>
<td>Emergency Communications Centre</td>
<td>• Provides dispatch services and data collection for Fire</td>
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<td>EMS Contract Provider</td>
<td>• Provides all paramedic staffing</td>
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<td></td>
<td>• Provides all paramedic supervisory staffing</td>
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<td></td>
<td>• Provides all management and administrative support staffing</td>
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<td>• Provides all consumable expenses</td>
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<td></td>
<td>• Provides day-to-day maintenance of buildings, fleet and equipment</td>
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<td>• Provides staffing support such a HR, IT, Quality Management</td>
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<td></td>
<td>• Submits performance reports to CKFES</td>
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<tr>
<td>The Municipality of Chatham-Kent &amp; Council</td>
<td>• Is responsible for the cost of ambulance services, subject to subsidy received of $0.50 per dollar</td>
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<td>• Must provide ambulance services that meet both requirements of the Ambulance Act and the needs of the community</td>
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<td>• The Fire Paramedic Chief is responsible to Council and the Ministry for the provision of EMS, as well as the OFMEM and FPPA for Fire</td>
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<td></td>
<td>• Ensures that the contract provider is meeting the requirements of the contract and the Ambulance Act</td>
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<td></td>
<td>• Provides the EMS and Fire infrastructure, e.g. - stations, ambulances, equipment, and facility maintenance</td>
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<td></td>
<td>• Sets EMS service levels in CK</td>
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<td>• Approves budgets for EMS services in CK</td>
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<tr>
<td>Stakeholders</td>
<td>Business Responsibilities</td>
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<td>----------------------------------------------------------------------------</td>
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</table>
| Chatham Kent Professional Firefighters Association (CKPFFA), the Ontario Professional Firefighters Association (OPFFA), International Association of Firefighters (IAFF) | • CKPFFA is the local Bargaining Unit for All Professional (full-time) Firefighters in CK  
• The OPFFA is the provincial oversight organization for all Local (full-time) Firefighter Bargaining Units in Ontario  
• The IAFF is the parent union for all full-time firefighters in North America and oversees all State and Provincial Associations |
| Service Employees International Union                                      | • Is the current Bargaining Unit for all paramedics working for the current EMS Contract provider                                                                                                                                 |
| Neighbouring Municipalities                                                | • Provide EMS service coverage in CK when service pressures exhaust existing resources  
• Receives EMS and Fire service coverage from CK when service pressures exhaust existing resources |
| All Area Hospitals                                                         | • Receives the patients entered into the EMS system  
• Off load delays have a direct impact on EMS service levels in CK |
| Volunteer & Fulltime Firefighters                                         | • Provide tiered medical response services  
• Work closely with the paramedics in providing care for patients  
• Provide services for public assistance, life threatening and fire-related calls |
| Taxpayers                                                                  | • Provide the funding for Fire and EMS through taxes  
• Are the customers for Fire and EMS Services in CK |
| First Nations                                                             | • CKFES provides Fire response for Moraviantown  
• CKFES provides EMS response for Moraviantown and Walpole Island |

**Chatham-Kent Fire and Emergency Services Background**

The current CKFES organizational model is the result of the 1998 provincially mandated amalgamation. Several separate fire departments were amalgamated into one large, nineteen station-department consisting of:  
• two full-time stations in Chatham,  
• one composite (full-time and volunteer) station in Wallaceburg,
the above stations are staffed by sixty-five full-time firefighters and ten volunteer firefighters,
• sixteen volunteer stations, staffed by approximately 340 volunteer firefighters, spread throughout the smaller urban and rural communities within the Municipality of Chatham-Kent.

CKFES is also responsible for the delivery of EMS (land ambulance) services and Emergency Preparedness and Management.

The vision of Chatham-Kent Fire and Emergency Services is “to be recognized by those we serve, our members and our peers as providing the best fire, medical and life safety services in the country.” We are committed to being a dynamic organization that adjusts to the needs of the community, and recognized as a leader for innovative and collaborative service response strategies as a highly functioning integrated Emergency Service.

A support team of full-time staff provide additional services to all of CK which includes four fire prevention staff, one public safety educator and one training officer. CKFES’ Leadership Team consists of the Fire Paramedic Chief, who heads up both the Fire and EMS Divisions, three Fire Assistant Chiefs and one EMS/Emergency Preparedness Assistant Chief. There are three permanent administrative support staff and one administrative support member working under a temporary contract. CKFES provides fire suppression with over 400 volunteer and full-time firefighters, rescue, fire inspection and investigation, training, emergency management, public safety education and special operations services to the municipality, as well as administers the EMS contract for the community.

After amalgamation, all of the fire departments in Chatham-Kent became part of one Fire Service. However, the response strategy for fire resources within the Municipality of Chatham-Kent did not change and has remained relatively status quo until very recently when administration was able to create a composite fire service with fulltime and volunteers working together. Fire station boundaries remained consistent with historical pre-determined boundaries that existed pre-amalgamation, rather than utilizing resources that could respond more quickly. The Collective Agreement for fulltime firefighters limited how resources could be used (recently changed) and the amalgamation limited the ability for automatic and mutual aid under the Fire Prevention and Protection Act (FPPA) as a means to staff large scale emergencies. The CKFES fleet numbers and resources (not in scope for this review) also remained unchanged despite a new amalgamated service, and the Collective Agreement with the full-time sector limited the ability of management to effectively and efficiently use fire resources. This was due in large part to organizational and cultural resistance to change, as well as contractual and technological limitations. As a result, dispatch procedures did not consider department-wide resources when allocating a response. This lead to inconsistent and subjective response determinations that were not based on response time analysis nor industry best practices, particularly for large scale incidents. This hampered the ability of CKFES to assemble an effective firefighting force (e.g. 16 firefighters for a house fire) and negatively impacted public and firefighter safety. This ultimately lead to the OFMEM (Office of the Fire Marshal and Emergency Management) sending a letter to Chatham-Kent Council in September 2005, advising them to change the response standards to meet ten firefighters in ten minutes.

The CKFES is divided into seven key service delivery areas – Administration, Emergency Management, EMS, Fire Prevention, Public Education, Fire Suppression and Training. Fire Protection Services are mandated under the Fire Protection and Prevention Act.
According to this legislation, municipalities must provide enough fire protection services (fire suppression, training, fire prevention, public education and communications) that it determines meets the needs and circumstances of the community. It must also specifically provide the following: public education, fire inspections upon complaint and request, fire inspections of all vulnerable occupancies, smoke alarm and carbon monoxide alarm programs and conduct regular community fire-risk assessments.

The level of EMS service is determined by Council and must be in compliance with provincial standards. It is also closely monitored by the MOHLTC to ensure that the service delivery standards are maintained as per the Ambulance Act.

Emergency Management: Emergency Management is a legislated responsibility under the Emergency Management and Civil Protection Act. Although Emergency Management was not in the scope of this review, we are providing the following information to help provide a better understanding of CKFES’ legislated responsibilities. All municipalities must have a Community Emergency Management Coordinator (CEMC) and an emergency program that consists of the following:

1) An emergency plan with an annual review,
2) A risk analysis of the municipality,
3) Hazard identification,
4) Annual emergency exercise,
5) Annual emergency management staff training,
6) Public emergency preparedness education,
7) Development of other ancillary emergency plans,
8) The provision of prevention, mitigation and recovery strategies for large scale emergencies,
9) An Emergency Preparedness By-law (currently under development),
10) A Public Information Officer,
11) A Community Emergency Management Coordinator (CEMC), and
12) An Emergency Operations Centre (EOC).

In a large scale emergency, the Emergency Operations Centre is activated to facilitate and coordinate the following:

- Declarations of an Emergency,
- Implementing the Emergency plan and activation of municipal resources,
- Ensuring the safety of the community,
- Maintaining essential/critical infrastructure,
- Keeping the municipality operating outside the emergency area perimeter,
- Providing logistical and planning support to the emergency site,
- Liaising with other levels of government and other agencies, including the Provincial EOC,
- The provision of shelters, reception centres, call centres for those in need,
- The provision of critical information to the public through various media platforms,
- Coordinating the community’s recovery from the emergency.

Emergency Management is meant to ensure that the Municipality is ready to respond to a large scale incident or disaster, such as a tornado, flooding or an ice storm, a significant train derailment containing hazardous materials in the urban area, terrorism, etc. These types of emergencies would quickly exhaust the local capability to handle the event or event(s), and challenge the ability of emergency resources to communicate with each other and to
communicate with the public. These types of large scale emergencies require extensive planning, training, community education, and inter-operational communications to mitigate these risks. Emergency Management is intended to prevent, mitigate and help coordinate response and recovery efforts.

Recently, Emergency Management and the Office of the Fire Marshal amalgamated at the Provincial level to become the OFMEM (Office of the Fire Marshal and Emergency Management), which is expected to create synergies provincially. It is very common for Fire Services to provide the CEMC duties and Emergency Management to be integrated in a municipal structure.
CKFES Situational Analysis

Chatham-Kent Fire and Emergency Services (CKFES) is an ‘all hazards' and ‘all response' agency. In addition to emergencies involving fires, it responds to any and all other calls for emergency service, including motor vehicle rescues, underwater rescues and recoveries, hazardous materials incidents, water/ice rescues, confined space rescues, high angle rescues, rough terrain rescues and other technical rescues, industrial accidents, medical emergencies, serious weather events, requests for emergency assistance and any other calls for service.

In 2015, there were 3,138 calls for service as broken out in the Chart below.

**CHART 1 - CKFES 2015 CALLS FOR SERVICE**

![Chart showing call types and counts]

Those 3,138 calls are broken out by station below:
### Total All Incidents by Station 2015

<table>
<thead>
<tr>
<th>Station</th>
<th>Total Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stn. 1</td>
<td>969</td>
</tr>
<tr>
<td>Stn. 2</td>
<td>890</td>
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<tr>
<td>Stn. 3</td>
<td>369</td>
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<td>Stn. 4</td>
<td>76</td>
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<td>Stn. 5</td>
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<td>Stn. 6</td>
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<td>Stn. 7</td>
<td>50</td>
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<td>Stn. 8</td>
<td>42</td>
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<td>Stn. 9</td>
<td>42</td>
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<td>Stn. 10</td>
<td>54</td>
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<td>Stn. 11</td>
<td>113</td>
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<td>Stn. 12</td>
<td>35</td>
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<td>Stn. 14</td>
<td>22</td>
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<td>Stn. 15</td>
<td>36</td>
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<td>Stn. 16</td>
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<td>Stn. 17</td>
<td>26</td>
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<td>Stn. 18</td>
<td>128</td>
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<td>Stn. 19</td>
<td>98</td>
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<td>Stn. 20</td>
<td>57</td>
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<td></td>
<td>2011</td>
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<td>------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Structure Fires</td>
<td>207</td>
</tr>
<tr>
<td>% Increase/Decrease</td>
<td>Nil</td>
</tr>
</tbody>
</table>

The average increase in structure fires over the last five years is 12.4%, however, the number of structure fires in CK have taken a sharp incline in 2014 and 2015 resulting in an 81.45% increase since 2013. Although structure fires have rose sharply over the last two years, they are still less than tiered medical response calls (over 787 or 31% of the total incidents in 2015). The result of higher medical calls means that six emergency personnel are sent to the medical emergency and tying up resources that could attend the next call if the organization was structured differently.

Fire staffing is based on station locations, budget considerations, geography and endeavoring to maintain a consistent response time and adequate resource level to incidents no matter the time of day, in accordance with NFPA 1720 guidelines, best practices of firefighting recognized by the OFMEM. Operational staff must be available 24 hours a day, 7 days per week in urban areas due to an increased risk in larger centres. In the rural areas, emergency response staffing is based on getting the minimum number of staff to the scene in the shortest period of time. CKFES is very fortunate to have a robust and dedicated amount of volunteer firefighters however, achieving adequate staffing levels for emergency response during day-time hours is sometimes a challenge in our rural areas; they are staffed by volunteer firefighters, who may have full-time jobs that require them to leave work to attend the emergency, or may have jobs outside of the station’s first response area.

Typically, when there is an emergency or a problem that does not clearly fit into another emergency response agency’s portfolio, such as a large tornado, CKFES becomes the default emergency service that initially responds and frequently manages these events.

CKFES also responds with EMS to medical emergencies when the emergency particulars meet certain predetermined guidelines set by Council, (see Tiered Response Criteria in Appendix D), in order to provide rapid assistance to patients when seconds count. These guidelines include the following:

- Immediate dispatch of all fire stations to patients with Vital Signs Absent (VSA).
- Immediate dispatch of full-time Fire Stations #s 1, 2, and 3 to unconscious/unresponsive or any chief complaint of chest pain.
- Delayed dispatch for volunteer stations #s 4-20 to unconscious/unresponsive or any chief complaint of chest pain when EMS response time is expected to be greater than ten minutes.

Once EMS arrives, firefighters continue to assist the Paramedics with patient care, both at the scene and on route to the hospital. In addition, Fire assists EMS frequently for patient extrication, forcible entry and securing a premise at or following a call.

The Tiered Response Agreement does not include patients or residents located in short or long term medical facilities, doctors or dental offices, homes for the aged, or special care facilities, etc.
When a conflict arises between a tiered medical response and calls specific to fire, fire-related calls take precedence.

CKFES has evolved into a multi-faceted, all-risks emergency response service, providing the residents of Chatham-Kent the appropriate level of service for fire, tiered medical response, and many other rescue services, respecting the local means and circumstances.

**Best Practices Used for Firefighting**

The Office of the Fire Marshal and Emergency Management (OFMEM) has outlined a strategy for fire services which relies on the Three Lines of Defense and includes:

1. Public Education on Fire Safety
2. Fire Prevention and Code Enforcement
3. Emergency Response

This strategy is based on the principle that it is much safer and more cost effective to prevent an emergency from starting, than to respond to a call. This can be accomplished through Public Safety Education and Fire Prevention efforts. However, when the last line of defence: Emergency Response is required to mitigate a fire or other emergency, there is a need for a timely response. The room temperatures associated with structure fires can escalate exponentially from an initial incipient stage room temperature of about 80°C to room temperatures exceeding 1200 °C or “flashover” temperatures in as little as three (3) minutes. Flashover occurs when everything in the room (furniture, paint on walls, flooring, etc.) has reached its ignition temperature and simultaneously/instantaneously ignites, incinerating anything in the room. This situation is exacerbated by modern building construction methods and the use of materials and building techniques that do not react/respond well to fire and high heat conditions. This can often result in a more rapid failure of the structure than ever before. CKFES has analyzed the buildings in CK and found approximately 75% are old stock with the remaining being new construction. The contents found in these fires are usually made of combustible materials that emit highly toxic, superheated gases and vapours. Most fire deaths occur within a place of residence or where people sleep. When a fire occurs within a typical single family home, conditions degrade rapidly within minutes inside the structure. Due to rapid buildup of heat, toxic chemicals, smoke and spread of the fire, this usually leads to the death of any occupant caught in this environment.

Unfortunately, the use of modern construction methods and materials has not mitigated these hazards and in some circumstances has significantly increased the risks through the use of engineered lumber that has allowed for more cost effective construction of open-concept homes. As situations worsen with newer homes, they are often less stable and increase the risk to the firefighter during interior firefighting operations.

As a result, the window of opportunity for successful intervention and rescue is greatly reduced. Over the past 20 years, the rate of fire spread inside a dwelling has increased due to the introduction of new construction materials, contents and home designs. To add to the challenges, the size of the building lots has also decreased, thereby increasing the potential for the fire to spread beyond the building of origin, which underscores the necessity of a timely response.

Fire service experts (for example: OFMEM, National Fire Protection Agency (NFPA), International and Canadian Associations of Fire Chiefs, etc.) emphasize the importance of
establishing fire response protocols which ensure that sufficient resources are dispatched to the
call, as quickly and safely as possible.

In order to maintain firefighter safety, fire incident commanders (IC) must implement a Risk
Management Plan at every working structure fire that includes the appointment of firefighters to
the positions of: safety officer, accountability officer, rapid intervention or “on deck” crews, and
rehabilitation. Incident commanders must now develop an incident action plan that achieves key
benchmarks in order of priority. The IC should work from a fixed position inside a vehicle
utilizing a tactical worksheet and incident command technology in order to keep track of
personnel assignments and available resources.

The best practices level of staffing at structure fires in a community such as CK is outlined in the
NFPA 1720 Guideline: Guideline for the Organization and Deployment of Fire Suppression
Operations, Emergency Medical Operations and Special Operations to the Public by
Volunteer Fire Departments. The highlights of this guideline are as follows:

**TABLE 3 - NFPA 1720 GUIDELINE FOR ASSEMBLING AN EFFECTIVE FIREFIGHTING FORCE**

<table>
<thead>
<tr>
<th>Time Frame</th>
<th>Minimum Staffing Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within four minutes</td>
<td>4 Firefighters – 2 inside and 2 outside for a rapid attack</td>
</tr>
<tr>
<td>Within six minutes</td>
<td>At least 4 More Firefighters</td>
</tr>
<tr>
<td></td>
<td>1 Incident Commander and Accountability Officer/Safety Officer</td>
</tr>
</tbody>
</table>

NFPA 1720 is considered a North American Best Practice Guideline (referenced by
agencies such as the Ministry of Labour, Fire Insurance Underwriters (FUS), Criminal and
Civil Courts, etc.).

In order to meet the provisions of NFPA 1720, the service must be able to:

- Commence an attack within two (2) minutes of arrival (fire apparatus), 90 % of the time,
- There must be an Incident Commander and this must be communicated upon arrival,
- There must be an incident command structure,
- Fire fighters must be organized into company units or teams.
- At least two firefighters will operate as a team.
- There must be an accountability system in place at all calls,
- The Company Officer (Team Leader) must at all times be aware of the location and
  activity of each member.
- At least four (4) members must be assembled before interior fire operations begin
(unless a known immediate threat to life exists).

- At least two (2) of these four (4) must remain on the exterior (outside the hazard area) and be available to rescue the two (2) making entry.
- One of the exterior members may be engaged in other activities.
- The Service must be able to sustain operations such as: fire suppression, search and rescue, forcible entry, ventilation, accountability, rapid intervention, property protection and other support activities for a prolonged period of time.

NFPA 1720 - 4.1.2.1 (3) states:

The fire department shall establish the following objectives:

240 seconds or less travel time for the arrival of the first arriving engine company at a fire suppression incident and 480 seconds or less travel time for the deployment of an initial full alarm assignment at a fire suppression incident.

Determine Resource Requirements to Meet Demands

Fire stations in CK are currently placed in locations based on the previous response needs of the former pre-amalgamation communities. While some station locations reflect current needs, the network of response coverage that includes station locations, staff employed, and the fleet deployment, had not been maximized.

It should be noted that unlike Police and EMS, only three stations in Chatham-Kent are staffed 24 hours per day. All other stations are not staffed until a call is received. Thereafter, volunteers drive to the station and then respond to the emergency. The average time it takes for fire apparatus to begin to respond in these areas varies from four to six minutes depending on the station. Finding the staff to provide service during daytime hours is a challenge.

In the past, the responding fire apparatus may or may not be from the closest station as station area boundaries established at the time of amalgamation did not necessarily reflect quickest response determinants nor the most ideal station location within the response area. In addition to the challenges above, fire apparatus responding to fire emergencies may or may not be fully staffed. In addition, CKFES needs to consider convergence and depth of response to backfill stations who have responded to another emergency.

To address this issue, Council has approved a quickest station response strategy on December 14, 2015 (See Appendix E for the Report to Council). In addition, through a comprehensive analysis, CKFES has altered the historic station response boundaries and is also currently moving toward a day-time automatic two-station response strategy in the volunteer sector to confirmed structure fires, where needed.

EMS Background

In 1999, the Province of Ontario downloaded the responsibility for the delivery of land ambulance services or EMS (Emergency Medical Services) to upper-tier municipalities.

The provision of land ambulance services is a legislated requirement contained in the Ambulance Act and its associated regulations. This Act is administered by the Ministry of Health and Long Term Care (MOHLTC). The Province retained control of ambulance dispatch throughout most of the Province by strategically locating Central Ambulance Communication
Centres (CACC) in order to maintain a province-wide seamless service delivery model for ambulance response.

In 2000, the Municipality assumed administrative and financial responsibility for EMS. After issuing an RFP, Sun Parlour EMS was selected as the service provider and the respective parties agreed to a five year contract. After the contract expired in 2005, it was further renewed with Sun Parlour on three separate occasions between the years 2005 and 2011.

In 2011, an RFP process was initiated and in January of 2012, a five year contract for EMS Service Delivery was awarded to Medavie EMS Ontario Ltd., with the current contract expiring on December 31, 2016.

Prior to the Provincial download, the EMS service structure consisted of ambulance bases located in Chatham, Wallaceburg, Tilbury, Bothwell and Ridgetown, with the Ridgetown and Wallaceburg EMS bases staffed 18 hours per day and the other EMS bases staffed 24 hours per day. When EMS was downloaded from the Province, EMS service delivery was enhanced across the Municipality to 24 hours per day for all bases.

In 2002, the EMS base in Bothwell was moved to Thamesville and co-located at the Thamesville fire station. In 2004, a single paramedic-staffed Emergency Response Unit (ERU) was placed in service in Blenheim, originally in an under-utilized PUC Building and eventually moved to be co-located at the Blenheim fire station in 2013.

After 2000, other service enhancements that were initiated to improve overall patient outcomes include: working in partnership with the local Base Hospital, upgrading the Life Pack monitor/defibrillators to a more advanced model, training paramedics to initiate intravenous (I.V.) lines and symptom relief drugs and more recently, the purchase and implementation of power stretchers and power loading systems.

The level of service and patient care provided to our community as directed by Council is called Primary Care. Paramedics in Ontario have three levels of care referred to as “scope of practice” that is outlined in the National Occupational Competency Profile (NOCP) by the Paramedic Association of Canada (PAC). These three levels are nationally recognized and accepted the MOHLTC and the Base Hospital Program (BHP). The three levels of care are:

1) Primary Care Paramedics (PCP)
2) Advance Care Paramedics (ACP)
3) Critical Care Paramedics (CCP)

**Primary Care Paramedics (PCP)**

The majority of the paramedics in the Province of Ontario are PCPs. In Ontario, PCPs are graduates from a one or two year community college program. Once the college program is successfully completed, the candidate must complete a provincial examination for certification, known as the Advanced Emergency Medical Care Assistant (A-EMCA) exam. Once the candidate has successfully completed the provincial examination, they are required to be certified by a Base Hospital physician to perform a number of controlled medical acts for individuals experiencing acute injury or illness. In addition, each PCP must complete continuing medical education courses on an annual basis to maintain their qualifications with the Base Hospital.

The PCP skill set that the Base Hospital oversees includes:
• semi-automatic defibrillation
• blood glucose testing
• intra-muscular injections
• 12-Lead ECG acquisition
• pulse oxymetry monitoring
• administration of symptom relief medications (next column):
  • acetylsalicylic acid (ASA)
  • epinephrine
  • glucagon
  • glucose gel
  • nitroglycerine spray
  • salbutamol

Some PCPs may have enhanced training to include additional medications and/or skills such as:

• continuous positive airway pressure (CPAP) device application
• supra-glottic airway insertion
• taser probe removal
• peripheral IV initiation and fluid administration
• additional medications (next column):
  • dextrose (D50W)
  • dimenhydrinate (Gravol)
  • diphenhydramine (Benedryl)
  • acetaminophen (Tylenol)
  • ibuprofen (Advil)
  • ketorolac (Torodol)

**Advanced Care Paramedics (ACP)**

In addition to the PCP requirements and scope of practice an Advanced Care Paramedic (ACP), after two years of experience as a PCP, undergoes an additional one year of highly intensive training at the post-diploma level (1200 hours). Training is focused in a didactic classroom, skills training and months of clinical preceptorship where students work directly with physicians and other allied health providers to demonstrate competence. Following this training and evaluation, the ACP must obtain certification from the Base Hospital to perform the scope of practice in the field.

In addition to the PCP skill set, ACP providers are qualified to perform and/or use:

• advanced airway management equipment
• orotracheal and nasotracheal intubation equipment
• lighted stylet intubation equipment
• LMA's
• orogastric and nasogastric tubes
• SPO2 monitoring
• Side stream ETCO2 monitoring (capnography and capnometry)
• mechanical ventilation
• laryngoscopy and removal of foreign body obstruction using MacGill forceps
• intravenous therapy
• pharmaceutical therapy
• 12 lead ECG interpretation
• needle thoracotomy
• chest tube monitoring

• intraosseous and external jugular IV starts
• manual defibrillation, synchronized cardioversion and external transcutaneous cardiac pacing
• treatment of cardiac emergencies according to Heart & Stroke Foundation Advanced Cardiac Life Support (ACLS) guidelines
• administration of the following emergency medications: Adenosine, ASA, Atropine, Dextrose, Diazepam, Dimenhydrinate, Diphenhydramine, Dopamine, Epinephrine, Fentanyl, Furosemide, Glucagon, Lidocaine, Morphine, Naloxone, Nitroglycerine, Salbutamol, Sodium Bicarbonate, Midazolam and other medications (drug list may vary from one service to another)
Critical Care Paramedics (CCP)

The Critical Care Paramedic (CCP) and Critical Care Flight Paramedic (CCP-F) have five years of additional education and function with a greatly expanded scope of practice over the Advanced Care Paramedic.

The scope of practice of the Critical Care Paramedic is designed to maintain the high level of treatment from Intensive Care Sending Facilities during the out of hospital transport of the patient and until delivery at the Receiving Facility.

The vast majority of CCPs work for ORNGE (Ontario's Air Ambulance provider) with less than 20 working for Toronto Paramedic Services.

In addition to the skills that ACP’s and ACP(F)’s (not listed here) perform, the CCP and CCP(F) practice includes:

- trans venous pacing
- greatly expanded pharmaceutical therapy
- invasive patient monitoring

Source: https://www.ontarioparamedic.ca/ (Ontario Paramedic Association)

For more information on the Controlled Acts Regulation from the MOHLTC, please see Appendix F.

The level of EMS service delivery mandated by Council for CK is the Primary Care Paramedic Level.

Tiered Response protocols adopted by Fire and EMS have also changed in CK since the provincial download of EMS. Initially the criteria for dispatching Fire units to a tiered response medical call included the consideration of EMS response time and the seriousness of the call for service. In 2004, this criteria was expanded by Council to include an expanded list of dispatch determinants. Following a three year trial, a working group consisting of staff from Fire, EMS and CACC, was established to review the expanded response criteria as it was adding tremendous pressure to the volunteer sector. In 2007, Council approved the recommendation from the working group to change the dispatch of fire resources to tiered response determinants. The change approved included adding an EMS response time greater than ten minutes to all calls other than VSA calls in the volunteer sector.

EMS Situational Analysis

Currently, EMS services in CK are provided by Medavie EMS Ontario ltd., under contract to the Municipality. CKFES manages the contract to ensure that key performance criteria are met and that the community receives the levels of care that has been established by Council, as outlined in the Land Ambulance Service Level Agreement and as required by the Province.

CKFES manages, maintains, owns and provides the entire EMS infrastructure, including: buildings, fleet (including spare vehicles) and medical equipment. CKFES works closely with the Base Hospital, the Chatham-Kent Health Alliance and the Local Health Integration Network (LHIN) to support the EMS contract provider and their employees. The contract provider supplies the frontline response staff, supervisors and management personnel.
The level of EMS service is set by Council and is approved/monitored by the MOHLTC. In CK this service level is as follows: a maximum of eight in-service emergency first response vehicles are permitted and shall consist of the following deployment: six - 24 hour per day ambulances, one single paramedic ERU staffed 24 hours per day and one ambulance that is staffed for peak hours only; specifically 16 hours per day on weekdays and 12 hours per day on weekends to cover those hours where EMS service demands are the heaviest.

The current contractor’s organizational structure consists of a Director, an Operations Manager, a Quality Assurance Manager, a Fleet and Facilities Manager, four Supervisors, and an Administrative Assistant. The contractor employs 57 full time paramedics and 43 part-time paramedics, although these numbers may vary. Part-time paramedics are limited to 24 hours per week and help avoid incurring overtime costs, but they still carry labour burden. The contractor reports to the Fire Paramedic Chief through the Assistant Chief of EMS and Emergency Management who is responsible to the MOHLTC and Council for the provision of land ambulance services in CK.

The total EMS fleet consists of 15 vehicles, including spare ambulances and supervisory vehicles.

During a recent review of by-laws and provincial regulations/statutes relating to Chatham-Kent Fire and Emergency Services, it was identified that the title of Fire Chief did not align with the responsibilities for the position. It was recommended that the title of the position be changed from “Fire Chief” to “Fire Paramedic Chief”, to better reflect the position’s responsibilities as they pertain to EMS including: emergency response, community paramedicine, public safety education, special events, staffing, budgeting, responsibilities to both Council and to MOHLTC and for the provision of these services as outlined in the “Land Ambulance Service Grant Agreement”. The name change was approved by Council on January 12, 2015.

Over the last four years EMS calls for service have increased by an average of 5.72% with 2015 seeing a 7.6% percent increase in call volume. In addition, Code 8\(^3\)s or stand-by calls have increased by 6.5% over the last four years; and by 4% last year alone. Further, Code 0\(^4\) calls have increased significantly in the last two years with the average Code 0 declared time being 29 minutes in duration.

Dispatch priority Code 4 (urgent) calls accounted for 7356 of 64% of dispatched calls in 2014. Dispatch return priority Code 3 (prompt) accounted for 6,816 of 59% of the dispatched calls in 2014. Ambulances assigned to the Chatham Base location were dispatched to 6,086 or 53% of calls.

A review of all the data shows that the system is under extreme stress and the EMS contract provider agrees that contract performance requirements are getting harder to achieve with existing resources. In January 2016, the contract provider made a request to double the acceptable response time for Code 3 – “Urgent Calls” due to the ever increasing pressure on the system. This request was denied due to a performance clause in the service level agreement/contract that would result in a decrease in the Council-approved EMS service levels. (see page 21 for definition of codes).

\[^3\] Code 8: Ambulances leave their base and stage at a pre-determined location due to limited resources, this increases the response time into each community they are protecting

\[^4\] Code 0: 0 to 3 ambulances left in service within CK
The future of Hospital and Primary Care services offered in the community will impact EMS, but no firm data could be obtained at the time of this report.

In addition, CKFES is concerned about how services in a new super hospital in the Windsor-Essex area (expected to be built in the next decade) might affect patient transfers. CKFES expects patient transport times would impact EMS services, especially for Code 3 and Code 4 patient transfers that are required in order for patients to receive specialist medical treatments that occur with little planning.

The expansion of ACPs has grown significantly since the download of EMS from the Province. In large urban and metropolitan areas, there has been debate over the balance between spending time on scene doing more advanced interventions with ACPs versus rapid transport to hospitals with PCPs. Other factors to consider when choosing a PCP vs ACP scope of practice is the amount of critical calls the paramedic would be exposed to in order to maintain their skill set and competency. In short, ACPs require enough calls to maintain their skills and an implementation model should use PCPs for PCP calls and ACPs for ACP calls. In CK, one must also consider the geographical challenges and the longer transport times to get to a hospital. There is logic to support an ACP model in CK to overcome the challenges of longer transport times outside Chatham and Wallaceburg. Many communities have chosen a chase car model (Emergency Response Unit) when implementing an ACP response strategy to improve patient care. A chase car is basically an emergency response vehicle staffed with a lone paramedic that is not set up to transport. The concept is that a chase car prevents the ACP from getting caught in low acuity calls and offload delays in the hospital. CK could achieve an ACP chase car strategy to respond to high acuity calls throughout CK at a relatively low cost. It is recommended that an ACP chase car strategy be considered by Council as an option in each model to offset longer transport times and help ease some of the strain on current resources.

Other projected challenges include: increasing patient off-load delays\(^5\), and the increased number of Code 0 and Code 8 assignments. This has been the experience of other jurisdictions under similar circumstances throughout the Province and the rest of Canada.

In CK, like many other jurisdictions, an aging population typically means an increased number of calls for service and the prediction is that this will cause further strains on EMS. In 2014, calls for service in CK according to age were as follows:

**Table 4 - EMS Calls by Age Group (2014)**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>EMS Calls for Service</th>
<th>Population in CK</th>
<th>Population in CK (%)</th>
<th>% of Call Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 40</td>
<td>2,217</td>
<td>47,180</td>
<td>45.33</td>
<td>19.7</td>
</tr>
<tr>
<td>41 - 60</td>
<td>2,285</td>
<td>31,045</td>
<td>29.83</td>
<td>20.3</td>
</tr>
<tr>
<td>61 - 80</td>
<td>3,671</td>
<td>20,490</td>
<td>19.69</td>
<td>32.6</td>
</tr>
<tr>
<td>81 - 100</td>
<td>3,071</td>
<td>5,365</td>
<td>5.15</td>
<td>27.3</td>
</tr>
</tbody>
</table>

To further illustrate the rise in EMS call volumes, in 2014 the increase in call volume between the 41-60 age group (population = 31,045) and the 61-80 age group (population = 20,490) was over 49% despite considerably less numbers in the latter category. As CK’s average population

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\(^5\) Offload delay corresponds to EMS turnaround time at the hospital. When EMS crews arrive at a hospital, they are required to stay with the patient until a bed is available or when a verbal report is given to staff. This completes transfer of care (offload). Therefore busy hospital = longer offload delay
age rises, so do the EMS calls for service. The final age category shows a disproportionate correlation between calls for service and population, with only 5,365 people or 5.15% of the population accounting for 27% of EMS calls. As the 61-80 year old age group moves into this category, the calls for service will increase exponentially. This is the tsunami that the health care system is concerned about and information Council should consider when determining the future of EMS.

CKFES and the contract provider have been working together to meet the emergency response needs of the community in the most cost efficient and effective manner. Despite these efforts, it is expected that pressures on the current service delivery model will continuously rise due to increased call volumes. While CKFES currently has a good relationship with the land ambulance contract provider, and is satisfied that the current service has met the terms of the service level agreement/contract over the past four years, both organizations have had to carefully monitor the existing circumstances and environment in order to ensure that the required performance metrics have been continuously met for a system that is under extreme stress. It is because of these alarming indicators, Community Paramedicine has gained so much support internationally. CK currently is operating a pilot for Community Paramedicine that is yielding positive results, for which Ministry funding has been renewed twice and extended until the end of 2017.

In 2013, CK implemented iMedic (cloud-based EMS electronic patient care reporting system used in the Province) with the use of mobile data terminals in the ambulances. This system allowed for more transparency for EMS data between the contractor, the ambulance dispatch centre and CKFES, which has helped all parties understand the state of EMS in CK. CKFES has been accessing and analyzing significantly greater data sets over the last three years through the use of this technology and has developed Key Performance Indicators (KPIs) for EMS (as well as Fire), to verify that the provisions of the service delivery contract are being met. Although iMedic has been very helpful, CKFES has found discrepancies between the data sets found in iMedic and other programs that capture data. The data is entered from multiple data sources and varies based on how it is analysed, e.g. stand-by movements versus calls, and some information comes from the Province and iMedic tries to match that data with the data CKEMS paramedics are entering. While the numbers may not match exactly between sources, the data still allows for trends to be discovered. While CKFES is not 100% comfortable with all of the data, it has been helpful in understanding trends and performance since 2013. CKFES and our partners are diligently working to fix this discrepancy.

CKFES has a thorough understanding of the land ambulance business needs, both now and in the future. All early indications show that based on the circumstances outlined above, and based on the predicted future service pressures, more resources are going to be required to maintain Council mandated minimum service delivery levels (see Table 5 below or Appendix D). If the current levels of service are not increased, either more resources are going to be needed or another approach will have to be considered.

**CK EMS – Response Time Requirements**

Since 2001 the municipalities have had the legislated responsibility to ensure proper land ambulance services to its residents. The legislated response time standard was based on the 1996 90th percentile for CTAS\(^6\) calls. The Chatham-Kent 90th percentile was 14 minutes 34

\(^6\) CTAS: acronym for Canadian Triage and Acuity Scale; a five-level triage scale with the highest severity level 1(resuscitation) and the lowest severity levels 5 (non-urgent) used to assign a level of acuity to
seconds. Beginning in 2013 the response time standard format was changed to the elapsed time from the point a CTAS 1 or other emergency call is received by the service to the arrival of paramedics or other responder to the scene. The charts show the proposed standard along with the actual percentages for 2013, 2014 and 2015.

**TABLE 5 - RESPONSE TIME REQUIREMENTS**

<table>
<thead>
<tr>
<th>Resource</th>
<th>Time to Patient’s Side</th>
<th>Target Percentage</th>
<th>Actual Percentage (CK)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>2013</td>
</tr>
<tr>
<td>First Responder</td>
<td>6 minutes</td>
<td>45%</td>
<td>50</td>
</tr>
<tr>
<td>CTAS 1</td>
<td>8 minutes</td>
<td>60%</td>
<td>80</td>
</tr>
<tr>
<td>CTAS 2</td>
<td>12 minutes</td>
<td>80%</td>
<td>85</td>
</tr>
<tr>
<td>CTAS 3</td>
<td>15 minutes</td>
<td>90%</td>
<td>90</td>
</tr>
<tr>
<td>CTAS 4</td>
<td>30 minutes</td>
<td>95%</td>
<td>99</td>
</tr>
<tr>
<td>CTAS 5</td>
<td>30 minutes</td>
<td>95%</td>
<td>100</td>
</tr>
</tbody>
</table>

- CTAS Level 1: CTAS level assigned for resuscitation.
- CTAS Level 2: CTAS level assigned for emergent.
- CTAS Level 3: CTAS level assigned for urgent.
- CTAS Level 4: CTAS level assigned for less urgent.
- CTAS Level 5: CTAS level assigned for non-urgent.

<table>
<thead>
<tr>
<th>Neighbour Municipalities</th>
<th>First Responder (2014 Actual)</th>
<th>CTAS 1 (2014 Actual)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brant</td>
<td>39</td>
<td>66</td>
</tr>
<tr>
<td>Chatham-Kent</td>
<td>52</td>
<td>71 (59 in 2015)</td>
</tr>
<tr>
<td>Elgin</td>
<td>49</td>
<td>67</td>
</tr>
<tr>
<td>Essex</td>
<td>59</td>
<td>76</td>
</tr>
<tr>
<td>Huron</td>
<td>42</td>
<td>41</td>
</tr>
<tr>
<td>Oxford</td>
<td>35</td>
<td>70</td>
</tr>
<tr>
<td>Sudbury</td>
<td>65</td>
<td>80</td>
</tr>
<tr>
<td>Waterloo</td>
<td>39</td>
<td>66</td>
</tr>
</tbody>
</table>

**EMS Codes**

- Code 1 – Deferrable – lowest priority for land ambulance. Example – a pre-hospital call - the return transfer of a patient from a pre-approved appointment (sometimes completed by a private patient transfer service)
- Code 2 – Scheduled – Example – the scheduled transfer of a patient between hospitals (sometimes completed by a private patient transfer service)
- Code 3 – Urgent - non-life threatening - Example – a broken leg
- Code 4 – Life-threatening – Example – emergency call for a cardiac arrest (lights, sirens)
- Code 8 – Ambulance is on standby at a strategic location between ambulance bases
- Code 0 – Three ambulances or less available to service all of CK

Note: EMS crews are dispatched and respond to a call in the community as a Code 1, 3 or 4. Once the patient is assessed the code is changed to a corresponding CTAS 1, 2, 3, 4 or 5 (above) so the hospital has a clear understanding of the patient’s condition.

The first graph below illustrates the call distribution by EMS Base. The second graph below allows the reader to see the vast majority of EMS calls dispatched are prioritized in the highest category (Code 4 – Urgent). This is typical for all emergency services to ensure the customer gets the quickest response possible. This must be correlated with the return priority, shown in the third graph below, which shows the reader the majority of patients are transported to the hospital on a CTAS 3 and not a CTAS 1 or 2 (most life-threatening). The fourth graph also demonstrates the overwhelming majority of patient’s condition remains unchanged during the course of transport to the hospital. Therefore, an EMS system needs to weigh the balance of getting the right resource, to the right call, at the right time.
EMS Trends and Challenges

Currently the MOHLTC is responsible for setting ambulance, equipment and patient care standards and for monitoring and ensuring that there is compliance with those standards. Additionally, the Ministry provides financial assistance to municipal service providers by providing a grant to be used to offset the cost of providing land ambulance service. Typically the grant amount is 50% of the previous year’s Council approved budget. In 2015, that amount was $4,678,538, plus a First Nations grant of $280,000 (which is not dependent on Council’s budget). In addition, CK has been advised that a cost of living/ base budget adjustment of up to 3-5% annually is considered standard and not usually subject to secondary audit, because many communities are trying to improve their performance metrics to match increasing demands and past deficits.

Any changes to the grant that is above the cost of living is typically approved, provided the Municipality can demonstrate the need to increase the budget to maintain the service. For example, to add an additional staffed ambulance to the budget would require a demonstrated need. Once Council approves the budget increase, the MOHLTC will match that budget increase the following year.

The Ministry continues to be responsible for land ambulance communications services, base hospital training, staff monitoring programs in support of the local land ambulance service and the broader health care system.

Notwithstanding, municipal budgets have been under strain, and all municipal departments have been challenged to overcome inflationary costs while at the same time trying to provide and achieve the same level of quality services. While good relationships exist between all CK emergency services and amongst our allied agencies, both at emergency incidents and organizationally; legislation, work locations, contracts, and organizational structures limit what can be achieved with the current service delivery models and infrastructure.

Current EMS trends across Canada suggest that there will be an increase in the demand for service due to both an aging population, more complex social issues and increased population levels. It is predicted that an average increase in call volumes of 3%-5% annually can be expected across the Province and the Nation, for the foreseeable future.

Many other EMS service providers are faced with the same challenges and are currently reviewing and considering alternate options for their service delivery models in order to meet these current and future demands. However, not many are in the same situation as CK, having Police, Fire, EMS and HFS being at the same governance level.

Similar to all municipalities, CK is not insulated against these increasing costs. With the ever increasing average age of our community’s population, it is anticipated that the costs associated with emergency medical services will continue to rise. This is based on historical data, an aging population and Centre of Excellence models in health care, putting more demand on EMS than ever before. As a result, CKFES must continue to look for efficiencies and opportunities and better ways to provide the level of service expected by our community and approved by Council in the most cost-effective manner.

As the Provincial health care system continues to evolve in order to improve patient outcomes and to find relief for health care cost pressures, there is often an adverse effect on EMS; for example, off-load delays at hospitals, long distance transfers, etc. Another example is the destination-determination guidelines for both stroke and cardiac cases that require patients to
be transported to a tertiary hospital outside of the community. Unlike transfers which may be pre-arranged during business hours and are usually less urgent, these types of calls may bypass the local hospital in order to directly transport the patient to the closest tertiary facility immediately. While this may be good for patient care, it results in an unplanned departure of an ambulance and crew from the CK service delivery area and reduces the provision of an ideal level of service, including reducing the level of emergency response coverage for a community for an extended period of time. This also sometimes incurs unexpected overtime for the shift overrun.

To date, CK has benefited from not having to increase EMS resources for over a decade, other than the fixed price contract increase of 2% over the course of the contract. The last increase to resources was in 2004 when an ERU was deployed in Blenheim. This is not typical of most communities within Ontario. The reality is, the current level of resources has been fully maximized and the ability to maintain the current level of land ambulance service within the Municipality has been overextended.

**Chart 2 - Population by Age Group (CK)**

![Population by Age Group Chart](chart2.png)

Source: Statistics Canada

**Reserve Capacity**

Reserve Capacity in emergency services is the ability to deal with calls above the normal expected calls for service. Since amalgamation, the fire service has not really improved the reserve capacity, despite having an amalgamated, composite department. In the volunteer sector, the on-scene Incident Commander (IC) would call for additional resources in the volunteer sector if they were needed. Even if CKFES could predict certain times of the day or for certain events, resources would be insufficient. In the full-time sector, on-duty resources were
inadequate for a structure fire and therefore off-duty personnel would be called back to assist and this process takes time, leaving on-scene resources limited capabilities at the start of the incident and incurring overtime costs to callback the full-time firefighters. Once all off-duty personnel were called in, volunteers could be considered, but this would have been a very expensive and slow process.

Should a larger emergency have occurred, for example; a significant fire at the hospital, a multi-residential high rise occupancy, a fire in the downtown core, an extreme weather event or hazardous materials incident occur, CKFES would have immediately been overwhelmed.

EMS staffing is based on historical data and calculates staffing needs to match peak demands in service. Additional ambulances are typically deployed into the system and part-time staff are available as a reserve to fill in gaps. These peak staffing demands are typically from 7 a.m. to 10 p.m. when patient transfers and most emergencies occur, when people are awake.

Conversely, Fire has the highest risk for fire fatalities when people are asleep and fires remain undetected. Fire services in other jurisdictions have considered peak staffing but CKFES has no excess capacity to consider this strategy. CKFES has overcome this longstanding problem of reserve capacity through the negotiation of new contract language and by utilizing technology to allow for simultaneous deployment of full-time and volunteer resources as quickly as possible when required.

**Increasing Municipal Costs**

**TABLE 6 - DRIVERS FOR EMERGENCY SERVICE COST INCREASES (AMO 2012)**

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<thead>
<tr>
<th>Police</th>
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<tr>
<td>Provincial Regulatory Standards</td>
<td>Provincial Regulations &amp; Service Standards</td>
<td>Provincial Regulations &amp; Service Standards</td>
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<td>Arbitration and Essential Services Agreement</td>
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<td>Seamless Provincial EMS System</td>
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<td>Presumptive Legislation (cancers, etc.)</td>
<td>Qualifications for Paramedics</td>
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<tr>
<td>Capital Costs</td>
<td>Capital Costs (Significant – Fleet)</td>
<td>Capital Costs</td>
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</tbody>
</table>

- Costs for EMS are shared with the Province on a 50/50 basis while costs for CKFES are 100% supported by the local tax base.
- Emergency Services wages have exceeded inflation each year, on average, by 50% to 80%.
- Emergency Services wages increase has been far greater rate than the increases for other municipal employees.
- The total costs for Emergency Services (Police, Fire, Ambulance) is approximately 1/3 of the total municipal budget.
Options, Costs, Benefits

With the service opportunities and challenges listed previously, FES considered options for the future. The following section will identify the top three models considered, the options within the models as well as the costs associated with each, and the pros and cons of each.

Potential Models

1) **Model A – Status Quo**: CKFES remains as is and EMS delivered by a third party service provider under contract to the Municipality. CK will remain one of the few municipalities in the province to employ this type of EMS service delivery model.

2) **Model B – Direct Delivery Model**: EMS delivered directly through the formation of a third emergency service of unionized municipal workers (Police, Fire and EMS under the municipal umbrella), managed and administered with an integrated Fire and EMS management team.

3) **Model C – Direct Delivery Model**: A fully blended, composite Fire and EMS service under one service delivery umbrella.

Each model has four options for service improvements contained within it. The costs associated with each model are the total budgets for Fire and EMS combined, under the CKFES umbrella and do not include MOHLTC subsidy.

Model: A – Status Quo – Contracted EMS

CKFES remains as is with EMS delivered by a third party provider under contract to the Municipality.

Advantages

1) The Province (MOHLTC) would have no issues with status quo and there would be no licensing issues.

2) All existing agreements and arrangements with outside agencies such as the Base Hospital and the MOHLTC would remain status quo.

3) The Third Party Provider assumes all responsibility for HR management and labour relations issues.

4) The Third Party Provider assumes most of the legal liability associated with the actions of staff members.

5) There is an opportunity for temporary (during the life of the contract) cost avoidance re: EMS collective agreements, labour relations matters, labour burden costs, and WSIB.

6) Fluctuating costs for consumables associated with staff are absorbed in the Service Delivery Agreement.

7) The EMS Service Delivery Agreement is set at a fixed cost, providing the Municipality with future cost certainty.
Disadvantages

1) The increasing demands for EMS service will not be met unless more resources are added, otherwise the service levels will drop.

2) No improvement in the Fire or EMS reserve capacity.

3) Eliminates the opportunity to gain efficiencies in management and supervision [by having less full-time employees (FTEs)].

4) There are increased costs associated with the renewal of a contracted service.

5) The level of service will remain at status quo for both EMS and Fire. Substantially increased costs will be associated with any service level enhancements.

6) An EMS Service Delivery Agreement that is set at a fixed cost cannot be reduced during budget deliberations. Allowances for inflation contained within the agreement may exceed the actual inflation rate.

7) The Municipality will continue to face increasing costs for both Fire and EMS and will face the choice of either absorbing those costs or reducing the level of service at the end of the current EMS contract.

8) Positive variances for EMS (if any) are not able to assist with corporate pressures.

9) There are less opportunities for proactive education and prevention services with current resources.

10) EMS response times will increase if resources are not added.

11) Records management and data performance metrics are separate and distinct between the two organizations.

12) The health and wellbeing of the community will not likely improve significantly unless more resources are added.

13) There is no reason to believe that the safety and wellbeing of emergency responders will improve and the incidents of service burnout and long term chronic health problems may increase as there are less staff deployment options.

14) The cost to implement an Advanced Care Paramedic level of service is much higher. (It is included in Option 2, not Option 1, as we are diverting management wages to front line staff.)

15) Fatalities, injuries, and loss of property as a result of fire events will likely remain status quo.

16) The opportunity for synergies and economies of scale will be limited.

17)
18) CK has minimal control over service delivery other than performance metrics. There is a very limited ability to develop partnerships to create sensible synergies.

**TABLE 7 - RISK ASSESSMENT - MODEL A - AREAS OF UNCERTAINTY**

**CHART 3 - CURRENT ORGANIZATIONAL CHART FOR FIRE AND EMS – MODEL A**

**No Enhancement - Option 1 – ERU Blenheim (Status Quo)**

**Model A** – This option represents the service presently being provided today with a working Supervisor located in Chatham.

**Enhancement - Option 2 – ERU Blenheim (plus a Stand-alone ACP Supervisor in Chatham)**

**Model A** – This option provides the same service level as Option 1 (above) with the addition of a stand-alone ACP Supervisor, which requires the hiring of an additional 5 FTEs.
**Enhancement - Option 3 – Replace the ERU with an Ambulance in Blenheim**

**Model A** – This option provides ACP Supervisors plus the addition of an ambulance, requiring an additional 5 FTEs (comprised of either part-time or full-time staff) above Option 2.

**Enhancement - Option 4 – An Additional Ambulance**

Model A – This option provides for an ACP Supervisor and an additional 24/7 ambulance. This will require an additional 5 FTEs (comprised of either part-time or full-time staff) to fill the additional ambulance service.

Note: In each model the COLA increases for Fire have not been factored into the pricing beyond 2017.
Model : B – Direct Delivery – Blended Fire and EMS Management with Stand Alone EMS Operations

Model B – Direct Delivery Model: EMS delivered directly through the formation of a third service of unionized emergency workers delivered under the municipal umbrella (Police, Fire and EMS), managed and administered with an integrated Fire and EMS management team.

Advantages

1) Greater control of the level of service, staff deployment and quality improvement initiatives.

2) The Province (MOHLTC) – licensing issues and negotiating the transition would be straight forward.

3) This model will provide an opportunity for the development of closer partnerships with the Base Hospital.

4) Some sharing of the management/administration team resources that may result in synergies.

5) The sharing of data, information and performance metrics.

6) There are increased opportunities for proactive education and prevention services.

7) Increased job security for the Paramedics who live and work in Chatham-Kent.

8) Very comparable in costs to contracted EMS.

Disadvantages

1) This Model provides the greatest risk to the Municipality due to future cost uncertainty.

2) The increasing demands for service will not be addressed by simply sharing a management team.

3) The Municipality assumes all costs associated with an increased number of FTE’s, including both onetime and ongoing costs. The number of employees would increase significantly as would the overtime to maintain the level of service.

4) 

5) 

6) 

7) 

8) The Municipality assumes greater liability associated with increased staffing levels and more staff activities.
9) Other municipal divisions assume a heavier workload and perhaps increased costs, divisions such as HROD, Information Technology and Legislative and Legal Services.

10) The Municipality assumes all costs associated with staff-related consumables.

11) The level of service will decrease significantly if resources are not added. Substantially increased costs will be associated with any service level enhancement.

12) The Municipality will continue to face increasing costs for both Fire and EMS on a yearly basis and will face the choice of either absorbing those costs or reducing the level of service.

13) This option does not take advantage of economies of scale.

14) Response times will not change as a result of an integrated administration.

15) There is no change in the capacity to respond to service utilization peaks in either Fire or EMS unless additional resources are added.

16) No reason to believe the safety and wellbeing of emergency responders will not improve or that the incidents of service burnout and long term chronic health problems will not increase.

17) Advanced Care Paramedic level of service will have substantially higher costs.

18) Fatalities, injuries, and loss of property as a result of fire events will likely remain status quo.

19)

20) More negotiating challenges for the Municipality, having a third emergency service and third Collective Agreement.

21)

22) There is no EMS cost containment strategy for the future.

23) Almost twice as many employees as Model C.
TABLE 8 - RISK ASSESSMENT - MODEL B - AREAS OF UNCERTAINTY

CHART 4 - BLENDED FIRE AND EMS MANAGEMENT WITH STAND ALONE EMS OPERATIONS - MODEL B

Model B: Direct Delivery: Blended Fire and EMS Management with Stand Alone EMS Operations

Personnel Break-Down:
7 Executive Officers
5 Administrative Support
1 Quality Manager (Legislated)
1 Quality Analyst (Legislated)

No Enhancement - Option 1 – ERU Blenheim (Status Quo)

Model B: This option provides the same service and staff compliment as the contracted service but has a stand-alone Supervisor and a blended management structure.

Enhancement - Option 2 – ERU Blenheim (plus a Stand-alone ACP Supervisor in Chatham)

Model B: This option is the same service as in Option 1 (above) but with a stand-alone ACP Supervisor.

Enhancement - Option 3 – Replace the ERU with an Ambulance in Blenheim

Model B: This option will provide the same structure as in Option 2 (above) but with the addition of an ambulance requiring an additional 5 FTEs (comprised of either part-time or full-time staff).
Enhancement - Option 4 – An Additional Ambulance

Model B: This option provides for an ACP Supervisor and an additional 24/7 ambulance service. This will require an additional 5 FTEs (comprised of either part-time or full-time staff) to fill the additional ambulance service.

Note: In each model the COLA increases for Fire have not been factored into the pricing beyond 2017.
Model: C – Direct Delivery – Fully Blended, Fully Composite Fire & EMS Services

Model C – Direct Delivery Model: A fully blended, composite Fire and EMS service under one service delivery umbrella.

The development of a new emergency response organization that blends Fire and EMS into one composite organization with full-time staff that are cross-trained and able to respond as either a firefighter or a paramedic. Jurisdictions that have utilized some or all of this model effectively include: Brandon and Thompson in Manitoba; Red Deer, Lethbridge and Strathcona County in Alberta; and many other jurisdictions in the United States. This service delivery model results in the most savings and efficiencies with regards to both executive, administrative and front line staff.

Advantages

1) This model would specifically fit the needs of CK for Fire and EMS with current resources.

2) This model provides for a much improved level of Fire and EMS service at lower costs to the Municipality.

3) This option provides for a more financially sustainable Fire and EMS service delivery model as overall expenditures will be reduced and costs are avoided well into the future.

4) It provides the Municipality with an increased level of future cost certainty.

5) Significant cost savings for a combined Fire and EMS service, despite the proposed service enhancements.

6) The number of overall FTE’s in a combined service is less than the sum of the total FTEs in the two separate services versus Model A & B.

7)

8) Frontline on duty staff will be able to function more efficiently and effectively and more resources will be more rapidly brought to bear to address large significant labour intensive emergencies. Cross-trained staff with double the capacity for either a fire or EMS emergency (reserve capacity).

9) There will be an improved level of safety for emergency first responders (Fire and EMS).

10) The amount of property loss and environment damage resulting from fires should be reduced.

11) There will be more efficient and effective management/supervisory/administrative organizational structure as the number of executive officers will be reduced from nine to five and the number of administrative support staff would be reduced from five to four. These positions would be invested into frontline positions and cost savings.

12) The proposed implementation of an Advanced Care Paramedic Scope of Practice and the addition of another 24 hour ambulance may be implemented at the existing current
budget levels as a new business has allowed us to structure the service differently. This would decrease the number of Code 0’s and Code 8’s and thereby provide a significantly higher level of service throughout all of CK.

13) This model allows for better staff utilization that can be directed towards proactive Fire and EMS public safety education programming and enhanced opportunities for community paramedicine outreach programs.

14) This model provides the most opportunity to leverage operational synergies and interoperability between Fire and EMS.

15) A more skilled workforce to work better with Police, Health and Family Services and partners, into the future.

16)

17) This model provides the best ability to combine records management systems and share information.

18) This Model provides the greatest opportunity to take advantage of economies of scale and combined inventory management systems.

19) This model will provide the greatest opportunity for the development of close partnerships with the Base Hospital and enhanced staff training and professional development.

20) This model provides the most stability for the full-time and volunteer fire sectors to work together.

21) There will be the ability to rotate staff between Fire and EMS which will result in enhanced staff health and safety, emotional well-being and a reduced frequency of injury and succession planning

22)

23)

24) Significant improvements in 24/7 supervision of staff with the implementation of Platoon Chiefs and Advanced Care Paramedics.

25) Organizational staff training and professional development opportunities will improve as will overall department succession planning opportunities.

26) Combining the two services into one will increase organizational diversity and all of the advantages that that entails.

27)

28) There is no resistance expected from the Base Hospital.
Disadvantages

1) There is increased potential for liability which can be mitigated with proper measures and insurance.

2) One time transitional costs associated with service integration, transition and some renovations to infrastructure.

3) The requirement for the development of a new organizational structure and culture increases the workload on administrative support staff.

4) The requirement for compliance with additional legislation increases the workload on administrative support staff.

5) The Municipality takes on an additional HR, IT and legal services workload.

6)

7)

8)

9)

10)

TABLE 9 - RISK ASSESSMENT - MODEL C - AREAS OF UNCERTAINTY
No Enhancement - Option 1 – ERU Blenheim (Status Quo)

**Model C:** This option has a blended workforce of Firefighter/Paramedics with a front line combined compliment of 120 FTEs in Year 5. There will be a blended management structure, with ACP Supervisors. The blended structure will streamline the administrative structure which will be more efficient, provide better 24/7 oversight, unite full-time, volunteer, Fire and EMS, and provide a better succession planning strategy. The new organizational structure eliminates the Senior Captain rank and replaces with Captain and blends Fire and EMS supervision 24/7 with Platoon Chiefs. The Assistant Chief of EMS will assist with the implementation of the new organization structure during the first four years. At Year 5, the Assistant Chief of EMS is eliminated.

**Year 1 (2017)  Year 2  Year 3  Year 4  Year 5**

Enhancement - Option 2 – ERU Blenheim (plus a Stand-alone ACP Supervisor)

**Model C:** This is the identical service level as is provided for in Option 1 as CKFES is able to achieve EMS Supervisor and ACPs by negotiating a new provision with firefighters that is not
limited to the current Collective Agreement of the paramedics. At year five, the Assistant Chief of EMS is eliminated.

Year 1 (2017)  Year 2  Year 3  Year 4  Year 5

Enhancement Option 3 – Replace the ERU with an Ambulance in Blenheim

Model C: This option utilizes the existing staff compliment and due to service integration requires an additional 3 FTEs. There is a total front line compliment of 123 FTEs in this model. Year five the Assistant Chief of EMS is eliminated.

Year 1 (2017)  Year 2  Year 3  Year 4  Year 5

Enhancement Option 4 – An Additional Ambulance

Model C: This option utilizes the existing staffing compliment and would require an additional 2 FTEs due to service integration. Year five the Assistant Chief of EMS is eliminated. There is a total front line compliment of 125 FTEs.

Year 1 (2017)  Year 2  Year 3  Year 4  Year 5

Note: In each model the COLA increases for Fire have not been factored into the pricing beyond 2017. Costing have been provided for five years as this is when model C becomes fully costed.

Validation of Model

Besides doing a very thorough financial analysis, the SRT went to extraordinary efforts to prove the operational validity of this model. The concept was to use previous emergency response data to identify if the model had the capacity to do what the team intuitively felt it could. In order to achieve this, a thorough analysis was completed that examined the data and a customized program was developed to illustrate Fire and EMS response statistics for analysis to visually represent the resource utilization in 24 hour blocks (EMS and Fire) for the past two-plus years.

The program allowed the SRT to not only validate the capacity for Fire to assist EMS and vice versa by assessing the busiest day for EMS resource utilization, the busiest day for Fire resource utilization or both. It also clearly portrays the type of call that is tying up units and the time of day when peak demand happens. The illustration below (Chart 6 – Unit Resource Utilization) has charted an example of a busy EMS day where CK EMS units are task saturated and EMS units from neighbouring communities are required to respond into CK to assist as part of the provincial EMS borderless net.

Chart 6 layout: between the top two bold (blue) bars are EMS resources that are called in to assist with EMS needs in CK. Between the second and third bold bars (top is blue, bottom is brown) are the CK EMS resources. Between the third and fourth bold bars (brown) are full-time fire resources. After the fifth bold bar (brown) are the volunteer fire resources.
As depicted in the graph below, CK EMS units are spending a large amount of time on Code 8 or stand by calls (illustrated in yellow) and EMS utilization for calls is very high. This often results in an increased emergency response time as units are then staged to provide uniformed coverage over a much larger area. In addition, the use of a neighboring community’s ambulance resources to cover a CK emergency not only creates a longer response time, it also triggers an automatic fee for service. Historically, the automatic fee for service has been close to a net zero sum for exchange of services between Chatham-Kent and its neighbours. Therefore, reducing the demand for a neighbouring community ambulance would not only improve ambulance response time but could also create a revenue stream for CKFES.

Chart 6 also validates that full-time fire has the capacity to assist with the EMS calls for service.

High EMS utilization rates put a strain on the fulltime and volunteer fire sector covering the call until the ambulance arrives. Typically fire responds to EMS calls with four firefighters. In the volunteer sector, tiered response criteria (other than vitals signs absent (VSA) calls) is only triggered when EMS is expected to be greater than ten minutes. Therefore, this strain on the EMS system also creates a strain and a corresponding cost on the fulltime and volunteer fire sector. Model C would eliminate this strain by only sending two firefighter-paramedics to the call in an ambulance rather than sending a fully staffed fire apparatus until an ambulance arrives. The relief to the system is exponential as typically three to four code 8 or stand by calls are generated when Chatham is depleted of ambulances.

**CHART 6 - UNIT RESOURCE UTILIZATION**

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**Other Sources for Financial Savings**

1)
2) Fleet Maintenance

Currently, the Fleet Division is challenged to complete all maintenance and annual inspection work for CKFES. Some work is contracted out to an external contract mechanic or external service providers. Costs for this contract in 2014 were just over $125,400. Regularly, repair parts are ordered and paid through the fleet budget. The work completed by the contractor is not an issue, but FES has concerns about succession planning as the owner is getting closer to retirement. Discussions with the contractor have explored a strategy. Although fleet was not in scope for this service review, it should be noted that CKFES is keenly aware of the financial pressures on the corporate AMP and is currently reviewing this area in order to bring a report to council for future considerations following this service review. It is expected that Model B & C would yield additional fleet efficiencies not currently available.
Conclusions

The analysis of the current and future environment for Service Delivery confirms the hypothesis that a fully integrated Fire and EMS Service would provide the most cost effective and sustainable service delivery model, while at the same time, providing enhanced levels of service for the community.

There are significant benefits that can be realized with the adoption of the proposed recommendation. The anticipated benefits include but are not limited to:

- a more financially sustainable Fire and EMS service delivery model as CK-supported tax expenditures will be reduced
- an increased level of future cost certainty
- an increased ability for cost avoidance for EMS by expanding the resource pool available to service calls for EMS
- an expectation of significant cost savings for a combined Fire and EMS service, despite the proposed service enhancements
- more capacity to shift towards preventative strategies (community paramedicine) with no additional resources
- improved emergency response times in CK for both Fire and EMS
- front-line, on duty staff will be able to function more efficiently and effectively
- the ability to rapidly muster additional resources to an emergency scene and address large scale incidents is greatly enhanced by allowing the dynamic allocation of EMS and Fire resources to address the situation at hand
- an improved level of safety for emergency first responders
- the amount of property loss and environment damage resulting from fires will be reduced with enhanced staffing
- more efficient and effective management/supervisory/administrative organizational structure as the number of executive officers will be reduced from nine to five and the number of administrative support staff would be reduced from five to four
- the proposed implementation of an Advanced Care Paramedic service level and the addition of another 24 hour ambulance may be implemented at the current budgeted levels
- staff utilization for use in proactive public safety education and community paramedicine outreach will be increased
- increased opportunities to take advantage of operational synergies and interoperability between Fire and EMS
- labour relations can be managed more efficiently under one collective agreement, rather than under two
- an enhanced ability to combine records management systems and share information
- improved opportunities to take advantage of economies of scale and combined inventory management systems
- better opportunities for developing synergies with Health and Family Services, the Regional Base Hospital and Local Health Integration Network (LHIN) to avoid costs
- opportunities for enhanced staff training and professional development
- the ability to rotate staff between Fire and EMS resulting in enhanced staff health and safety, emotional well-being and a reduced frequency of injury
• improved 24/7 supervision of staff in both organizations as Platoon Chiefs and Advanced Care Paramedics will manage all CK emergency service resources
• organizational staff training and professional development opportunities will improve as will succession planning opportunities
• combining the two services into one will increase organizational diversity and all of the advantages that that entails

Recommendation

It is recommended that:

1) Council direct staff to negotiate Model C with the respective parties and report back to Council for final approval on proceeding with Model A, B or C.

Next Steps if Model C Adopted

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TABLE 10 - PROJECTED COST

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Note: The table above shows projected costs for various items. The values are in units of dollars and are estimated for future periods.
Appendices

Appendix A - Chatham-Kent Fire Station Locations

Chatham-Kent Fire Department - Station Locations

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Appendix B - CK Emergency Medical Services Base Locations

Chatham-Kent Emergency Medical Services – Base Locations

Chatham Headquarters 337 Richmond Street, Chatham
Wallaceburg 7075 Base Line Road, Wallaceburg
Ridgetown 116 Main Street West, Ridgetown
Tilbury 9 Superior Street, Tilbury
Thamesville 97 Industrial Road, Thamesville
Blenheim 2 Charles Street, Blenheim

EMS Base Location
### Appendix D – Tiered Response Criteria for Chatham-Kent

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Appendix E – Report to Council: Revision of Fire Response Strategy

Municipality of Chatham-Kent
Fire and Emergency Services
Fire Administration

To: Mayor and Members of Council
From: Ken Stuebing, Fire Paramedic Chief
Date: December 1, 2015
Subject: Revision of Fire Response Strategy

Recommendation

It is recommended that:

1. This report be received by Council and the Municipal Response Strategy to assemble an effective firefighting force by dispatching the quickest station response to any fire call in the most efficient and effective manner possible be approved.

Background

At present, the response strategy for fire resources within the Municipality of Chatham-Kent have remained relatively unchanged since amalgamation and do not necessarily reflect the most efficient and effective use of fire resources. This was due in part to technology, training and contract limitations. As a result, dispatch procedures did not consider department-wide resources when allocating a response. This led to inconsistent and subjective response determinations that were not based on response time analysis or industry best practices, particularly for large scale incidents. This hampered the ability to assemble an effective firefighting force and negatively impacted public and firefighter safety.

Comments

As a result of our Strategic Priorities presented to, and accepted by Council, Chatham-Kent Fire and Emergency Services (CKFES) conducted a thorough review of current response capabilities and dispatch practices to identify shortcomings and barriers in maximizing service with current resources. After a systematic GIS analysis using an “intelligent road network”, extensive stakeholder input, physical analysis and contract negotiations, CKFES is now prepared to implement this long-awaited strategy. CKFES is convinced this will help ensure that the “the right resource is sent to the right call at the right time” in order to improve public and firefighter safety with current resources.

Therefore, CKFES is recommending that this Municipal response strategy be implemented to assemble an effective firefighting force by dispatching the quickest station response to any fire call in the most efficient and effective manner possible with current resources. This will effectively provide a true composite (volunteer and full-time) fire service delivery model, where volunteer firefighters assist full-time firefighters, and full-time firefighters assist volunteer firefighters as required.
Council Directions

The recommendation in this report supports the following Council Directions:

- **Jobs:**
  Everyone in Chatham-Kent who wants to work is able to work in meaningful employment

- **People:**
  Chatham-Kent is a welcoming community where people choose to live, learn, work, and play

- **Health:**
  Chatham-Kent is a healthy, active, safe, accessible community within a healthy natural and built environment

- **Financial Sustainability:**
  The Corporation of the Municipality of Chatham-Kent is financially sustainable

- Has the potential to support **all** Council Directions

- Neutral issues (does not support negatively or positively)

Consultation

Internal stakeholders affected by this change were consulted and understand the strategy.

Municipal GIS services assisted with a detailed analysis of the response capabilities.

The Fire Advisory Committee and Chatham-Kent Police Dispatch were consulted on the principle of the recommendation.

Financial Implications

It is expected that changes to the fire response strategy would have little to no effect on the overall operating budget. The change in strategy would result in a reallocation of work to the most appropriate resource, providing enhanced service at no additional cost.

Prepared by:

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Ken Stuebing, BHS, CCP(f)
Fire Paramedic Chief

Attachments: none.

C: CKPFFA President
   Volunteer Station Chiefs and Deputy Station Chiefs
   Manager, Information Services, Municipality of Chatham-Kent

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Appendix F – Controlled Acts Under Regulation

Controlled Acts Under Regulation 257/00

Schedule 1

List of Controlled Acts that may be performed by a Primary Care Paramedic

1. Administration of glucagon, oral glucose, nitro-glycerin, epinephrine, salbutamol and ASA (80 mg form)
2. Semi-automated external cardiac defibrillation

Schedule 2

List of Controlled Acts that may be performed by an Advanced Care Paramedic or, if authorized, a Primary Care Paramedic

1. Administration of the drugs referred to in item 1 of Schedule 1, in addition to any other drug approved by the Director on the recommendation of one or more medical directors of base hospital programs
2. Semi-automated external cardiac defibrillation
3. Peripheral intravenous therapy
4. Endotracheal intubation
5. Non-automated external cardiac defibrillation and monitoring

Schedule 3

List of Controlled Acts that may be performed by an Critical Care Paramedic or, if authorized, an Advanced Care Paramedic

1. Administration of any drug that an advanced care paramedic may administer under item 1 of Schedule 2, in addition to any other drug approved by the Director on the recommendation of one or more medical directors of base hospital programs
2. The controlled acts referred to in items 2 to 5 of Schedule 2
3. Non-automated external cardiac defibrillation, electrical cardioversion and pacing
4. Maintenance and monitoring of arterial and central venous catheters
5. Gastric intubation and suction
6. Ventilation (mechanical) and setting of ventilatory parameters
7. Lab blood value interpretation
8. Management of chest tubes and chest drainage systems
9. Chest x-ray interpretation
10. Urinary catheter insertion
11. Intravenous blood product administration
12. Doppler flow monitor use
13. Use of infusion pumps

Other advanced airway techniques, e.g. needle thoracostomy, cricothyroidotomy

Source: http://www.health.gov.on.ca/english/public/program/ehs/leg/reg_257_00.html (MOHLTC)