



Strathcona County Emergency Services

COMPREHENSIVE ANALYSIS OF EMERGENCY SERVICES OPERATIONS

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Ambulance Service-Delivery Options

Several questions related to EMS service-delivery were identified:

1. Is the SCES approach an effective, economical, and efficient means of providing ground ambulance service to the citizens of Strathcona County? **Yes**
2. Are there other alternatives to providing EMS service-delivery to the community? **Yes**
3. Should SCES continue its contractual relationship with AHS to provide ambulance service? **Yes**



Council Question 1:

What are the outcomes of the current SCES service model in comparison to neighbouring jurisdictions?



Question 1: Comparative Analysis

- Evaluation of Comparable Organizations
- Other Three-Person Staffing Models
 - Could not be certain that the organizations provided comparable information...
 - Limited cooperation & difficulty acquiring information
 - Significant challenges in acquiring accurate comparative data made effective analysis impossible within the scope of work and timeframe of the report



Organizations Evaluated

- Leduc Fire Services
- St. Albert Fire Services
- Red Deer Emergency Services
- Lethbridge Fire & Emergency Services
- Spruce Grove Fire Services
- Wood Buffalo Regional Emergency Services
- Calgary Fire Department
- Edmonton Fire Department

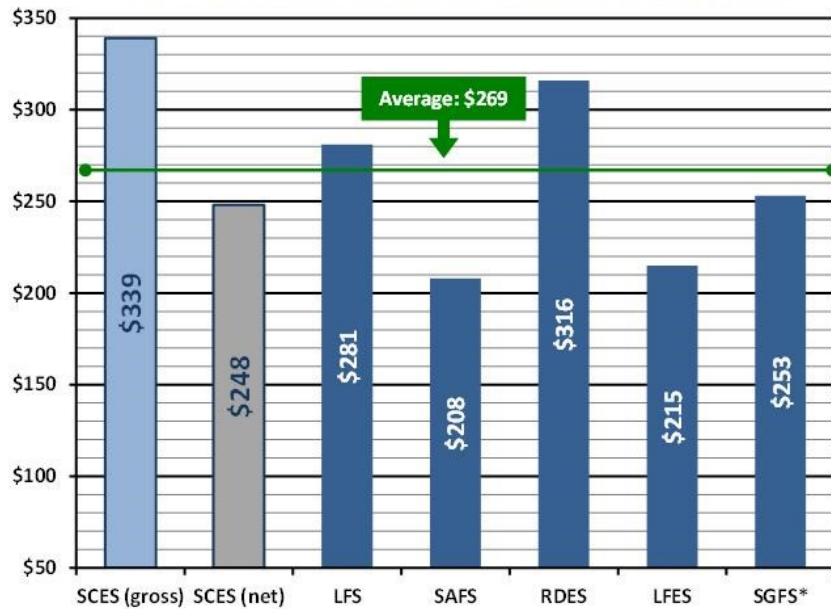
Three-Person Ambulances:

- Miami-Dade Fire Rescue (FL)
- St. Paul Fire Department (MN)
- Kennewick Fire Department (WA)



Comparative Analysis Summary

Figure 1: Gross Costs Per Capita of Comparable Organizations (2015)



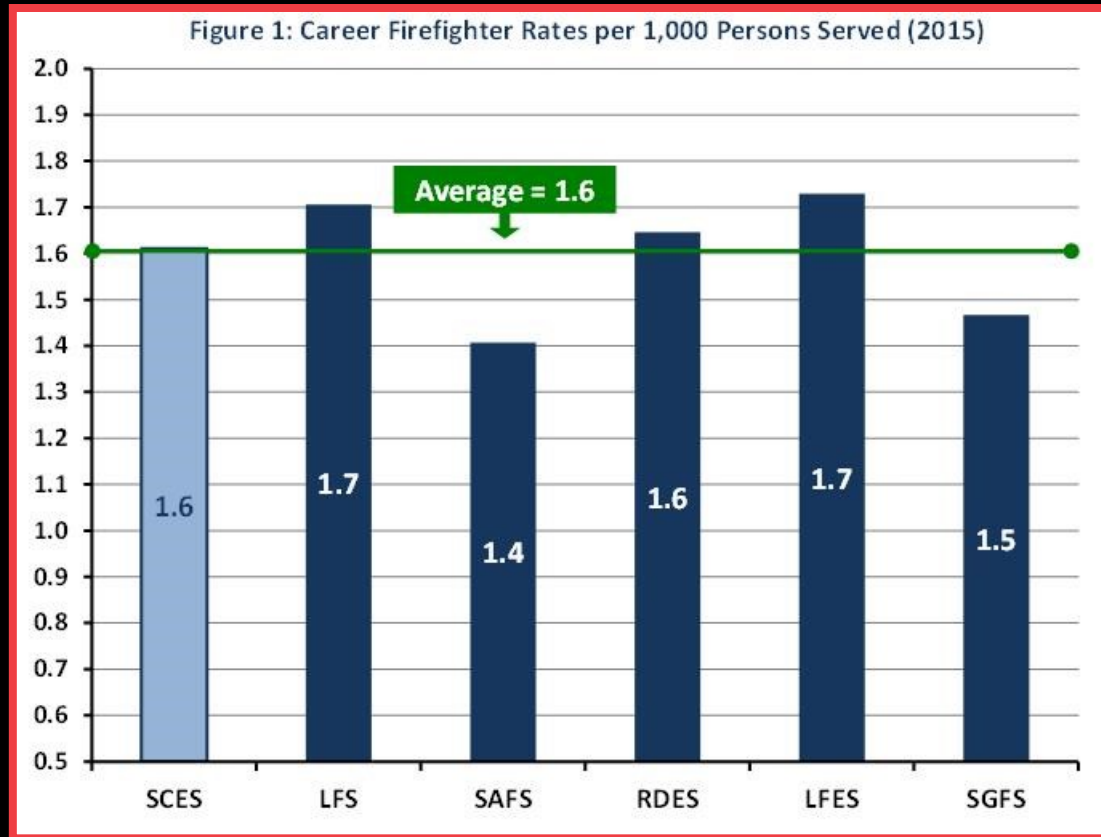
2015 Costs per Capita

2012 Hourly Ambulance Operation Costs

Figure 1: Comparison of Hourly Ambulance Operation Rates



Comparative Analysis Summary: Career Firefighter Rates



Council Question 2:

What is the rationale behind the number of personnel sent to respond to fires versus other emergencies?



Question 2: Number of Personnel Sent

- Depending on incident, in order to provide adequate fire suppression, rescue, hazmat, and other services, a sufficient number of personnel (and equipment) must be deployed.
- Four-person squads allow considerable flexibility, efficiency, and adequate personnel in fires and other non-EMS incidents.
- In critical EMS calls, fourth firefighter can be removed from the squad and temporarily assigned to the ambulance.
 - In those cases, the squad can remain available for other calls.
- NFPA and CFAI recommend four-person engine companies as the minimum staffing.



Question 2: Personnel Sent *continued...*

- Supported scientifically with two significant studies conducted by the U.S. Department of Commerce's National Institute of Standards & Technology:
 - **2010:** Found four-person firefighting crews were able to accomplish essential firefighting and rescue tasks 25% faster than three-person crews were
 - **2013:** Found firefighting crews of five or six members, instead of three or four, were significantly faster in completing search-and-rescue operations and extinguishing fires
- This is important, as Strathcona County anticipates the addition of at least three high-rise buildings exceeding 12 stories in the future
- In the future, SCES will need to be prepared for this with adequate personnel and equipment



Council Question 3:

What is the proportion of ambulance calls that utilize two, three, and four-person EMS personnel staffing respectively?



Question 3: EMS Personnel Staffing

- ESCI analyzed 24 months of single-response (as opposed to multi-company responses) ambulance calls.
- Cumulative results showed ambulances staffed with two personnel in only 3% of the incidents.
- Four personnel utilized in 3% of the calls.
 - Fourth person often represented a student and, in rare cases, a high-acuity patient requiring additional personnel.
- SCES ambulances were staffed with three personnel in 94% of ambulance responses during that period.
- During 2014 and 2015, 92% of EMS incidents did not require a multi-company response.



Council Question 4:

What is the proportion of ambulance calls in which three-person staffed ambulances are serving the needs of the residents of Strathcona County, versus those of other communities?



Question 4: Serving the County

- During 2014–2015, 79% of all three-person ambulance responses were to locations within Sherwood Park and Strathcona County
- Approximately 18% were responses to Edmonton, and the remaining 3% of calls were to other locations, such as Fort Saskatchewan
- Residents of Strathcona County are the recipients of the majority of the benefits of three-person ambulance service
 - Edmonton and other communities reap a portion of the benefits as well



SCES Ambulance Service-Delivery Options



Ambulance Service-Delivery Options

ESCI report lists the assorted advantages & disadvantages of each option



Proposed Service-Delivery Recommendations by ESCI



Service-Delivery Recommendations

Ambulance Service-Delivery:

- ESCI recommends *Option A: Continue the Status Quo*
 - Anecdotal and other information indicates this is the best option for Strathcona County
 - ESCI believes that, for Strathcona County, the three-person staffing model is superior
 - As with most systems, data does not exist to *definitively* prove that three-person produces better patient outcomes



Indicators for Maintaining Status Quo

- Majority (86%) of EMS incidents required a single ambulance response, minimizing the need to dispatch squads or other apparatus
- On-scene treatment modalities can be accomplished in shorter time; enables more rapid patient-preparation for transport
- Necessity of utilizing additional personnel from other apparatus, in order to accompany the patient during transport, is reduced
- Three-person crew increases the safety of both the patient and firefighters during transfer of the patient to the ambulance; both firefighters can remain seated with their seatbelts on
- With one firefighter driving the ambulance, two firefighters can attend to patient during transport; more efficient patient-management.
- Patient assessment and treatment, both on-scene and during transport, may result in fewer clinical errors and a more accurate clinical impression



Indicators *continued...*

- Current Associate Medical Director a stalwart supporter of the three-person ambulance model; believes it should be continued
- Allows for sufficient number of firefighters to bring necessary medical equipment and supplies to patient; minimizes the need to return to the ambulance for additional equipment
 - Also a safety benefit, as equipment can be distributed among three firefighters (e.g., carrying equipment while traveling up and down stairways).
- Enables flexibility during significant events, such as wildfires or rescues, where the third firefighter can be taken off the ambulance and assigned to staff another apparatus



Indicators *continued...*

- Experience found in other organizations utilizing three-person ambulance staffing can be applied to SCES:
 - Other departments have seen fewer back injuries
 - Depending on patient condition, roles and responsibilities can be rotated among the three firefighters, so that no one individual is required to perform the same functions consistently
 - Shorter scene times, resulting in earlier arrival at the hospital, and less time out of service
 - Following transport, ambulances are cleaned, re-stocked, and returned to service more quickly
 - Fewer errors have occurred in managing and documenting the use of scheduled drugs (e.g., narcotics, etc.)



Option A: Maintain Status Quo

Financial Impact of Option A

| Description | First Year | Second Year |
|---|------------|-------------|
| Annual AHS contract revenue | No change | No change |
| Revenue from patient fees | No change | No change |
| <i>Total Revenue Impact:</i> | \$0 | \$0 |
| Maintain current three-person staffing & deployment methods | No change | No change |
| <i>Total Expenditure Reduction/Increase</i> | \$0 | \$0 |
| TOTAL IMPACT: | \$0 | \$0 |



Service-Delivery Recommendations

Ambulance Service-Delivery:

- Next best would be *Option B: Two-Person Ambulances with QRUs*, if Option A is unacceptable

- Option C or D would be a step backward
- Eliminating FTEs in Operations would have significant negative ramifications
- Domino effect would jeopardize or diminish SCES capacity to provide service



Summary of Service-Delivery Options

Financial Impact of the Proposed Options

| Service-Delivery Options | First Year | Second Year |
|--|--------------|--------------|
| Option A: Maintain Status Quo | \$0 | \$0 |
| Option B: Two-Person Ambulances with QRUs | \$532,000 | \$22,000 |
| Option C: Two-Person Ambulance Staffing Model | \$0 | \$0 |
| Option D: Termination of Ambulance Service Provision | -\$2,580,000 | -\$2,580,000 |
| Option D with Enhanced EMS Service-Delivery | -\$3,112,000 | -\$2,602,000 |



Options for Increased Rural Service

Financial Impact of Increased Rural Service Demand

| Description | First Year | Second Year |
|--|------------------|------------------|
| No additional revenue | \$0 | \$0 |
| Total Revenue Impact: | \$0 | \$0 |
| QRU peak-demand | | \$575,000 |
| Capital vehicle purchase | | \$0 |
| Capital medical equipment | | \$0 |
| Annual maintenance | | \$11,000 |
| Subtotal Expenditure Increases: | \$686,000 | \$586,000 |
| TOTAL IMPACT: | \$686,000 | \$586,000 |

This recommendation is independent of ambulance service options



In Summary

- Outstanding employees
- Effective leadership
- High-performance, high-quality organization
- Operates effectively and efficiently
- Capable of mitigating numerous daily emergencies
 - Including potential risks that may occur within the community



A large sculpture of a Dalmatian dog, white with black spots, is shown from the chest up. It is holding a large hot dog in its mouth. The dog is standing on a paved area with some small square tiles. In the background, there is a multi-story brick building with balconies and a cloudy sky. A stone wall is visible in the foreground. A signpost with the word "HONOURED" is partially visible on the right.

QUESTIONS?