

**THE FEASIBILITY OF FURTHER EMERGENCY MEDICAL SERVICE
AND FIRE SERVICE INTEGRATION IN HAMILTON, ONTARIO**

by

BRENT BROWETT

BSc, Charles Sturt University, 1999

A thesis submitted in partial fulfillment of
the requirements for the degree of

MASTER OF ARTS

in

LEADERSHIP AND TRAINING

We accept this thesis as conforming

to the required standard

.....
Project Sponsor, Glen Peace

.....
Faculty Supervisor, Tony Williams, BSc, MSc, PhD

.....
Committee Chair, Graham Dickson, PhD

ROYAL ROADS UNIVERSITY

April 2006

© Brent Browett, 2006

ABSTRACT

To determine the level of Fire Department (FD) and Emergency Medical Services (EMS) integration feasible in Hamilton, a mid-size city in Ontario, Canada, a literature review preceded interviews at three case study sites and Hamilton focus group sessions. All representatives endorsed the current level of integration, including administrative and support service and tiered response. The majority of the study groups sanctioned further operational integration because of the potential for improved service efficiencies, effectiveness, and staff benefits. Circumstances that facilitate integration include a single union, unbiased and skilful leadership, best-practice change management, a clear and shared vision, EMS and Fire sharing the same coverage area, and enabling regulations. The recommendations are that a Hamilton Emergency Services (HES) multidisciplinary team should use continuous inquiry to collaboratively and strategically guide paced change to maximize the current organizational model while advancing operational integration to levels that have organizational and stakeholder support and measured benefit.

ACKNOWLEDGEMENTS

I began this lifelong project in 1985, when I met a profound mentor, Mike Shuster, MD, an emergency physician. He indoctrinated me with his belief that no one profession owns any skill that can save someone's life and that public service should be evidence based and reflect the clients' needs. Dr. Shuster and I worked with the Hamilton Fire Department to champion the first automated external defibrillation (AED) program in Canada for career firefighters, and my interest in efficiencies has continued.

Glen Peace is one of my contemporary mentors. His integrity and political shrewdness propelled him to the position of fire chief in Burlington, Ontario; then general manager of Hamilton Emergency Services; and, currently, chief administrative officer for the City of Hamilton. His continued passion for the community and his commitment to walk the talk make him a model leader and a perfect project sponsor.

Tony Williams has been a mentor throughout my entire career, and I was fortunate to secure him as my project supervisor. Williams has contributed across the world to the evolution of out-of-hospital emergency care, and he is the pioneer behind the Justice Institute of British Columbia Paramedic Program.

I would like to thank my wife, Angela Pirisi, for her relentless support during my master's journey; my sons, Brock, Taylor, and Trent, for their patience and sacrificing the time that I could have spent playing road hockey with them; and, their younger sister, Brigitte, whom I should have been tucking in at night instead of reading, and writing.

Finally, I wish to acknowledge my mom and dad for imbuing me with the principle that if I am going to do something, I must commit 100% or not bother. This effort represents my 100%.

TABLE OF CONTENTS

CHAPTER ONE – STUDY BACKGROUND.....	1
HES Response Performance: A Significant Problem and Opportunity.....	2
HES Resource Management: A Problem and an Opportunity.....	6
HES Staffing: A Fire Problem and an HES Opportunity	8
HES Financial Considerations: A Problem and an Opportunity	9
HES Vision Clarity: A Lost Opportunity If This Project Is Not Conducted	10
Factors That Contribute to the Integration Opportunity	11
The Organization: HES Service Overview	13
CHAPTER TWO – INFORMATION REVIEW	18
Review of Organizational Documents.....	18
Review of Supporting Literature	27
First Key Concept Area: What Levels of Fire and EMS Integration Are Feasible in Hamilton Based on Other Experiences?	27
First Subtopic: Common Levels of Fire and EMS Integration.....	27
Second Subtopic: Fire And EMS Integration: Potential Advantages and Disadvantages.....	30
Third Subtopic: Fire And EMS Integration: Potential Obstacles and Opportunities	31
Summary of Literature Review: First Key Concept	34
Second Key Concept Area: Integration in the Form of a Strategic Alliance, a Merger, or an Acquisition	34
First Subtopic: The Characteristics of a Strategic Alliance, Merger, or Acquisition	35
Second Subtopic: Advantages and Disadvantages of a Strategic Alliance, Merger, or Acquisition.....	38
Third Subtopic: Obstacles and Opportunities of a Strategic Alliance, Merger, Acquisition, or Major Change Initiative	42
Fourth Subtopic: Leadership in a Strategic Alliance, Merger, Acquisition, or Major Change Initiative.....	50
Summary of Literature Review Key Topics 1, 2, & 3: Fire and EMS Integration Alliance, Mergers, Acquisitions, and Leading Change.....	54
Potential Solutions to the Problem/Opportunity.....	55
CHAPTER THREE – RESEARCH METHODOLOGY.....	57
Research Paradigm and Overview of Methodology	57
Research Paradigms.....	57
Methodology.....	59
Data-Gathering Tools	61
Use of Case Studies.....	61

Focus Groups.....	63
Summary of Using Case Studies and Focus Groups	65
Participating Case Study Sites and Focus Groups	66
Interview Questions: Case Study Sites and Focus Groups	69
Face-to-Face Interviews: Case Study Sites and Focus Groups	70
Data Analysis	72
Trustworthiness.....	73
Reliability and Validity.....	73
Credibility.....	74
Verifying the Information.....	75
Researcher Bias.....	78
Study Ethics	79
Summary.....	80
 CHAPTER FOUR – RESEARCH STUDY RESULTS	 82
Study Findings, Conclusions, and Recommendations for Further Fire and EMS Integration in Hamilton	 82
Introduction	82
Advantages of Fire and EMS Integration: Findings	83
Efficiency	83
Effectiveness	85
Staff Benefits.....	86
Summary of Advantages of Integration.....	87
Disadvantages of Fire and EMS Integration: Findings.....	87
Operational Issues	88
Training Demands	90
Recruitment and Retention.....	92
Integration.....	93
Summary of Disadvantages of Integration	93
Financial Implications of Integration.....	93
Summary of Advantages, Disadvantages, and Financial Implications.....	96
Recommended Levels of Integration.....	96
Obstacles to Integration	99
Labour Issues.....	99
Culture.....	102
Change Management.....	103
Leadership	106
Other Obstacles to Integration.....	109
Summary of Obstacles to Integration	111
Opportunities for Successful Fire and EMS Integration.....	111
Leadership	112
Change Management.....	113
Labour Issues.....	115
Staffing	116
Operations	117

Summary of Opportunities for Integration	118
Summary Discussion of Fire and EMS Integration in Hamilton	119
Summary Conclusion.....	121
Study Summary Recommendations.....	122
Recommendation 1	122
Recommendation 2.....	123
Recommendation 3.....	123
Recommendation 4.....	124
 CHAPTER FIVE – RESEARCH IMPLICATIONS.....	 126
Organizational Implementation	126
Recommendation 1 and Steps for Internal Review of the Study Document	126
Recommendation 2 and Steps for Senior Management Leaders	128
Recommendation 3 and Steps for a Change Management Work Group.....	130
Recommendation 4 and Steps for an Integration Work Plan and Continuous Disciplined Analysis	132
Addressing the Key Obstacles	134
Steps to Address Labour Issues	134
Steps to Address Cultural Considerations	136
Steps to Address Change Management Processes.....	137
Steps to Address Leadership Considerations.....	137
Steps to Address Dominance by One Discipline.....	138
Steps to Address a Centralised Ambulance Communications Centre (CACC).....	140
Steps to Address Entry-Level Paramedics and Firefighters	141
Summary.....	142
Future Research	142
 CHAPTER SIX – LESSONS LEARNED	 145
 REFERENCES	 150
 APPENDIX A – QUESTIONS FOR SITE INTERVIEW AT CASE STUDIES AND FOR LOCAL FOCUS GROUPS	 162
 APPENDIX B – SUMMARY CUMULATIVE FINDINGS OF THE LITERATURE REVIEW OF FIRE AND EMS EXPERIENCES; STRATEGIC ALLIANCES, MERGERS, AND ACQUISITIONS; CASE STUDY SITES; AND HAMILTON FOCUS GROUPS	 164

LIST OF TABLES

Table 1. Hamilton Emergency Services: Fire and EMS Calls for Service, 2004	6
Table 2. Summary Findings of the Case Study Participants' or Focus Groups' Identified Advantages of Fire and EMS Integration	83
Table 3. Summary Findings of the Case Study Participants' or Focus Groups' identified Disadvantages (Weaknesses) of Fire and EMS Integration.....	88
Table 4. Summary Findings of the Case Study Participants' or Focus Groups' Perceptions of the Budget Impact of Integrating Fire and EMS	94
Table 5. Summary Findings of the Case Study Participants' and Focus Groups' Recommendations for the Level of Fire and EMS Integration for Their Service and Others	97
Table 6. Summary Findings of the Case Study Participants' or Focus Groups' Identified Obstacles to Fire and EMS Integration.....	100
Table 7. Summary Findings of the Case Study Participants' or Focus Groups' Identified Opportunities With Fire and EMS Integration	111

LIST OF FIGURES

Figure 1. City of Hamilton Organizational Chart. 22

Figure 2. HES Organizational Chart. 26

CHAPTER ONE – STUDY BACKGROUND

Throughout Canada and the United States, ambulance services, also referred to as *emergency medical services* (EMS), use a number of governance models to deliver the service. A popular design used in municipalities throughout the United States and in some smaller Canadian locations is a singular umbrella service that operates EMS and Fire. Williams (2006) reported that the results of returned surveys from the 200 most populous cities in America showed that 31.9% of the cities operated Fire and EMS as a single organization, 27.0% operated EMS transportation with dual-trained staff, and 4.9% operated EMS transportation separate from fire operations.

On January 1, 2001, the City of Hamilton, Ontario, based on the review and recommendation of an external consultant (IBI Group, 2000a), created Hamilton Emergency Services (HES), a new municipal department, as an umbrella service for Fire and EMS. The HES senior staff were directed to immediately integrate the administration and support services of Fire and EMS, and, by 2004, this objective was nearly complete. IBI Group noted that additional service improvements might be possible with operational integration implemented at the opportune time, which compelled the HES management to consider further Fire and EMS integration opportunities at a later period. The objectives of this study were to assess, through systematic inquiry, the feasibility of advancing Fire and EMS integration in Hamilton, including operations and, in the process, facilitating the growth of an interested community to foster continuous evaluation.

The integration of Fire and EMS into one emergency organization created an environment that lent itself to researching the following question: *What level of further*

Fire and Emergency Medical Services integration is feasible in the City of Hamilton, Ontario? The subquestions that guided the investigation are as follows:

1. What are the advantages, disadvantages, obstacles, and opportunities experienced by the services that have engaged in Fire and EMS operational integration and by HES while engaged in administration and support services integration?
2. What is the recommended level of Fire and EMS integration for Hamilton suggested by services that have engaged in operational integration, and what level of further integration do HES key stakeholders recommend?

Answering the study questions would ensure that HES is in an informed position to create a guiding document to facilitate strategic leadership. In addition, the study information will contribute to the literature on Fire and EMS integration, which may benefit other municipalities.

HES Response Performance: A Significant Problem and Opportunity

Kouzes and Posner (1997) suggested that having a shared vision amongst staff with collective goals and objectives can maximize organizational success. For HES senior management, putting these statements to practice equates to a public duty to appropriately research and consider collaborative solutions that may mitigate EMS performance gaps, and one option is Fire and EMS integration.

All municipalities in Ontario must meet minimum emergency medical response time standards based on their local 1996 activity (Ambulance Act, 2000), and they are recognized as key EMS performance measurements of effectiveness in various benchmark initiatives (Fitch & Keller, 2004; National Fire Protection Association

[NFPA], 2005a, 2005b; Chief Administrative Officers of Ontario, 2004). In Hamilton, within 10.02 minutes of an emergency call, the first EMS unit must arrive at the scene 90% of the time to comply with the Ministry of Health Long-Term Care (MOHLTC) provincially imposed standards. In addition, the City of Hamilton created its own municipal target of 8.9 minutes for dispatched emergency calls, a common EMS benchmark as noted by (Becknell, 2001b; Ernst & Young, 1996; Fitch, 2004c; Sachs, 1997b). HES EMS is not achieving the MOHLTC response time standard or the local target.

Prior to the creation of a municipal ambulance service in August 2000, four EMS agencies provided services in the Hamilton-Wentworth Region, and, from 1997 to 2000, those organizations also did not achieve the MOHLTC emergency response time standard. It is important to note that a municipal fire department in a suburb called Ancaster provided one of the four services using dual-trained firefighters certified at a primary care paramedic level (Marks, 2000). In 2000, with the download of governance from the province to the municipalities, the Ancaster operations were transferred to the City of Hamilton and merged with the three other ambulance services to create one unit, Hamilton EMS. Since the municipal assumption of the four services, the emergency response time increased by another seven seconds from 2000 to 2004, and the emergency call volume increased by 12% (City of Hamilton, 2004d). To mitigate the deterioration in the response times, the City of Hamilton increased annual frontline staffing by approximately 60,000 hours, or 20% percent of the pre-assumption total. However, the

added staffing hours have been at least marginalized by new pressures in hospital emergency department (ED) off-load delays.¹

Complicating resource availability further, Section 20 of the Ontario Employment Standards Act requires specific times for employee meal breaks. In 2004 it became evident that the Ministry of Labour was enforcing this section of the act with ambulance services by creating new limits on EMS resources and deployment flexibility. Adding to the challenge, if the provincial emergency response time standard is not met, the MOHLTC has the authority to reduce the land ambulance grant for that municipality.

Whereas EMS struggles to achieve the MOHLTC emergency response times, HES Fire has received the highest Fire rating available in North America—the Insurers’ Advisory Organisation (IAO) Class 1 rating—awarded December 2002. The IAO analysis, which is conducted once every 7 to 10 years, includes an evaluation of staffing levels, emergency response times, and other factors. A high IOA rating can contribute to lowering the commercial and residential property insurance premium rates by up to 15% (G. Peace, personal communication, May 15, 2004). Sachs (1997a) reported that other municipalities were also achieving the same financial benefit based on the insurance ratings. Richardson (1996), in discussing Fire and EMS integration in Winnipeg, cited the same concept of lowering the cost to conduct commerce in Hamilton to remain competitive with other municipalities in attracting business enterprise. This approach is also consistent with the city administrators’ strategic priorities, according to Rinaldo, General Manager of Corporate Services (City of Hamilton, 2005a). Maintaining the IAO

¹ *Off-load time*: the time that it takes a crew to hand over a patient(s), give a report, and prepare the ambulance for continued operations.

rating to contain or lower the commercial fire insurance costs requires sheltering the Fire resources, which creates the net effect of protecting downtime between Fire emergency calls. Emanating from these circumstances is an opportunity for Fire to participate in discretionary assignments between fire calls to augment the EMS response without harming the fire response capacity.

EMS has more than six times more medical calls than Fire has fire emergency calls; however, EMS has only one third of the HES frontline staff (City of Hamilton, Environmental Scan, 2004b; see Table 1). In 2004, to assist EMS with its demands, Fire responded to 15,004 of 33,855 medical calls that were emergencies. Given that Fire is already on site in these emergencies, there is a practical opportunity to expand the firefighters' assessment and medical skills to enhance their contribution, as others have noted (Chief Coroner, Province of Ontario, 2000; McManus, 2001; Richardson, 1996; Sachs, 1997a). In addition to the 15,004 medical calls that Fire went to in 2004 where their medical role could be expanded, there were an additional 18,851 medical calls that were dispatched as emergencies where a dual-trained paramedic-firefighter could stop the medical clock.² If such an initiative were implemented, it could fulfil the principle of using the capacity of one public service domain to assist another, consistent with the City of Hamilton's strategic objective; notably, to pursue business models to enhance efficiencies and effectiveness (City of Hamilton, 2002; 2004a).

² *Stop the medical clock*: the time interval that the MOHLTC will officially recognize from the ambulance dispatcher's receiving the call until the arrival of the first emergency service unit at the scene of the emergency.

Table 1

Hamilton Emergency Services: Fire and EMS Calls for Service, 2004

Service, 2004	Frontline staffing	Calls for service
HES Fire	470	9,269 Fire Emergency responses
HES EMS	171	53,395

Note: HES Fire also responded to 15,004 emergency medical assist calls in 2004.

HES Resource Management: A Problem and an Opportunity

As noted in the last section, hospital off-loading in the local emergency departments (EDs) is consuming EMS resources; in 2004, this amounted to 4,700 EMS staffing hours (City of Hamilton, 2004b). Compared to 2003, there is a trend that hospital off-load delays are occurring more frequently and for a longer duration. An off-load circumstance leaves the paramedic crew waiting with the patient for an ED bed to transfer care to the hospital, thus limiting the number of ambulances available to respond to medical emergencies in the community. A local multi-agency committee that was struck to review the root cause of this problem generally agreed that the off-load delays can be traced primarily to a flow-through problem within the hospital and to some extent to community health care access. A recent provincial report on hospital off-load delays had similar conclusions (Hospital Emergency Department and Ambulance Effectiveness Working Group, 2005). The solutions may be a combination of medical best practices and the right number of health care beds; however, the governance and control of and the root solutions to these issues are the responsibility of the provincial government and the hospitals. Although the municipal government may have influence, it lacks the authority

to change medical practice or the number of hospital beds. This leaves the municipality looking for local solutions to address surge consumption of EMS resources. If Fire had dual-trained fire-medics, during the hospital off-load delays Fire could respond to emergency medical calls in the community and provide the same level of medical care that an EMS paramedic does. Although it does not solve the root problem, it increases the surge capacity of the emergency medical resources to respond to emergency service requests when ambulance off-load delays peak.

As an added benefit, by engaging dual-trained fire-medics as a solution to hospital off-load delays, this extended resource can improve efficiencies in patient-refusal events. In 2004, 65.9% of the EMS calls for HES resulted in transport, and 34% of the calls were cancelled. Williams (2006) similarly reported, according to the results of a US city survey, that, “69.2% of all EMS requests resulted in a transport in 2005” (p. 58). With a range of 30% to 34% of the EMS call volume cancelled at scene, a dual-trained fire-medic as a first responder at the scene early could cancel all other dispatched HES units and free up the transport resources. Besides assisting resource utilization, the early cancellation of other HES units limits exposure to emergency driving collisions that Levick (2002) reported are responsible for more than 74% of EMS occupational deaths.

Purchasing more ambulance hours is another solution to hospital off-loading, although that solution may have little impact if the hospital sector consumes the new ambulance hours to create more temporary mobile hospital beds, whereas a fire first response unit will not be used in that manner.

HES Staffing: A Fire Problem and an HES Opportunity

HES predicts, based on current staffing demographics, that 125 of the 430 career firefighters may retire between 2010 and 2012 (City of Hamilton, 2004c). Hiring and training that many Fire recruits over two years would create a significant strain on management and training resources. In addition, hiring all of these staff will result in a significant portion of Fire staff having limited on-the-job experience in fire suppression, a concern that other fire departments have expressed, as Bruegman (1997) reported. Complicating the situation, if Hood (2000) and Ruch (2000) are correct that the “Generation Xers” (born between 1966 and 1980) and “Nexters” (born after 1980) will not choose lifelong careers, then some of the current staff who are in these age groups predictably will also resign (Hood, 2000). One means of mitigating this pressure could be to dual-train existing paramedics to be firefighters in advance of 2010. This pool of dual-trained staff could provide some transitional relief in fire suppression from 2010 to 2012 to lessen the impact of the seasoned staff leaving fire suppression. Ultimately, a core group of dual-trained fire-medics could assist with any temporary staff shortages in either discipline, Fire or EMS.

Phelps (2006), in discussing the staffing issues during a pandemic, warned of “a shortage of . . . first responders owing to their high risk for exposure and illness, as well as a shortage of critical personnel in important sectors such as military, police, fire” (p. 24). HES EMS and Fire, if they rely on their current staffing models, would be limited in their capacity to deliver even their current levels of service, without considering a surge in service requests (City of Hamilton, 2005c).

To provide an emergency planning contingency on a long-term basis, there is merit in having a depth of flexible staff resources in the form of a core group of dual-trained fire-medics who can respond to surge demands in either discipline.

The other consideration is to allow entry-level fire recruits to become prequalified as paramedics. With the predicted mass exodus of firefighters from 2010 to 2012, this initiative would quickly increase the pool of staff already dual trained. Ostrow (1996) reported that the Phoenix Fire Department has successfully applied this hiring practice as a strategy to build dual-trained capacity. In Hamilton this may be an ideal solution to enhance the medical qualifications in Fire, which would represent approximately 25% of career Fire staff and create the capacity for a dual-trained fire-medical on every fire apparatus in the city with no initial training costs to implement.

HES Financial Considerations: A Problem and an Opportunity

For the period to 2003-2004, City of Hamilton administrators were struggling to manage a municipal deficit that was expected to extend into 2005-2006. Staff were informed that financial recovery needed to be realized from service efficiencies, service reductions, expenditure decreases, or new provincial or federal funding sources (Robertson, 2003). For HES, that meant that unless the department was able to find a more efficient means of delivering services, the likely solution for Fire and EMS would be service reductions. Identifying a level of Fire and EMS integration that could contain costs and sustain service delivery would represent an appropriate contribution to the City of Hamilton's financial sustainability. This solution would also represent a systems-thinking approach to problem solving consistent with best practices, which numerous

leadership and management authors have recommended (Herzlinger, 1999b; Oshry, 1996; Senge, 1994; Yukl, 2002).

Another financial consideration is that Hamilton's paramedics' wages increased by 27% from July 1999 to December 2004, significantly narrowing the salary gap between career firefighters and paramedics. With this new development, if a municipality needs more EMS resources to meet increasing community needs, a more thorough option analysis that includes considering a merged EMS delivery system using dual-trained fire-medics increasingly becomes a responsible and reasonable consideration.

HES Vision Clarity: A Lost Opportunity If This Project Is Not Conducted

Without a strong HES clarity of purpose for the combined Fire and EMS organization, daily task decisions that have strategic implications are likely to be inconsistent (Anthony & Young, 2003). HES could use total quality management processes to guide daily task decisions, as Robertson (2002) and Zikmund (1997) described them. However, Hamilton has the potential to achieve superior definition by engaging in the more rigorous evaluation attained from a research project and then applying the study findings to develop a shared vision, goals, and objectives. The business activities that may benefit from such a vision include having consistent and standardized (a) recruitment strategies, (b) labour relation decisions, (c) policy and procedures, (d) staff training of shared competencies, (e) lobbying for enabling legislation that supports integration, and (f) capital purchases such as equipment and stations.

Factors That Contribute to the Integration Opportunity

This section discusses the contributing factors that have led to this opportunity. Other municipalities may have similar conditions to the extent that the solutions for Hamilton may be worthy of consideration by others.

The initiating event that promoted the integration of Fire and EMS in Hamilton was a cascade of organizational amalgamations, beginning with the Ontario government's downloading the responsibility for a number of public service programs to the municipalities. As part of that initiative on August 1, 2000, the City of Hamilton assumed the governance and operations of four local ambulance services (three of which had been privately operated) and consolidated them into one service called Hamilton Emergency Medical Services (City of Hamilton, 2000a).

The next change occurred in 2001, when the Ontario government legislated the six jurisdictions that made up the Hamilton-Wentworth Region to amalgamate to form one city, the City of Hamilton. Supported by this change, the six area fire departments merged into one citywide service. The single fire department that covered the same response zone as EMS created an opportunity for the two services to integrate, and other areas in like circumstances came to similar conclusions (Ernst & Young, 1996; Monosky, 2003). Local officials saw this as a potential opportunity to improve efficiencies and effectiveness with system redesign.

An independent consultant who was commissioned to review the organization recommended that EMS merge with Fire. Grouping line departments "together into core businesses" was consistent with "new business models" (Tindal & Tindal, 2000, p. 292) that many municipalities across Canada were adopting, with "a very strong emphasis on

performance and accountability” (p. 292). The integration of Fire and EMS was also consistent with the goals of the provincial government, according to Kelman (2000), which were to download services and reduce costs by eliminating duplication and rationalizing operations.

HES became the umbrella department for Fire and EMS, with two primary objectives of equal importance: emergency medical response and fire suppression. The other divisions within HES included (a) training, (b) emergency management, and (c) radio communications. All of the divisions shared one mission statement: “to protect and promote quality of life and public safety” (Peace, 2002, p. 5), as well as to build on the existing environment of cooperation between Fire and EMS.

Fire and EMS in Hamilton had a long and positive history of working together. Starting in the 1980s, if there was a delayed ambulance response, one of the six area fire departments provided tiered response assistance to medical emergencies. Exemplifying the extent of the collaboration, the Hamilton Fire Department, facilitated by local ambulance staff, became the first career fire department in Canada to provide automated defibrillation (Browett & Cossette, 1992). Further maturation of the Fire and EMS partnership since August 2000 has been part of what Collins (2001a) described as an “organic cumulative process” (p. 186). At the time of my research, EMS and Fire shared stations, vehicle maintenance, and stores distribution. Senge (1999), a notable author on the change process, supported leveraging the success of smaller changes to lead to broader organizational results, and the collaborative foundation of the Fire and EMS working relationship in Hamilton provides such an opportunity. Complementing this suggestion, Greenberg, Baron, Sales, and Owen (1996), cited the studies of Cartwright

and Cooper (1993) and recommended that, before entering into a merger, organizations first work “collaboratively on a joint venture and merge only after it is clear that the company’s cultures can coexist” (p. 510). This has been the path that HES has followed since 2000.

HES was in a laudable position in 2004 to conduct this research and to fulfil its broader civic responsibility to answer the question that may be of interest to other municipalities. The factors that I have noted in this section that make this plausible to consider include the following: (a) EMS for the City of Hamilton is one single service, (b) EMS and Fire cover the same primary response district and have been organized as one department within the City’s structure, and (c) EMS and Fire have a long, positive history as collaborators.

The Organization: HES Service Overview

The HES mission statement is to “protect and promote quality of life and public safety” (Peace, 2002, p. 5). HES is responsible for providing EMS and Fire service to 491,000 inhabitants in a locale covering 1,040 square kilometres, with one third urban and two thirds rural. Fire, though infrequently called upon, has mutual aid agreements with the surrounding municipalities; and EMS has a regulatory responsibility to provide on-demand support to any municipality in the province. The two operational divisions, EMS and Fire, receive assistance to execute the HES mission from shared administrative and support services. Some services are provided to Fire and EMS by the corporate structure, including purchasing, labour relations, facility maintenance, payroll, risk management, and finance.

EMS has the primary role of leading and providing emergency medical care response and transportation and nonemergency transport between medical facilities. The EMS frontline staff consist of full-time and part-time primary care and advanced care paramedics ([ACPs] City of Hamilton, 2005b). EMS also has staff for EMS scheduling, training, quality improvement, and overseeing HES labour relations—assigned staff (for Fire and EMS).

Fire is responsible for fire suppression, prevention, dispatch, training, data-collection staff, dispatch, and first response to medical emergencies. Fire also has the lead role in the shared HES mechanical division, HES stores support, and HES public education. In addition, Fire is responsible for citywide emergency communication systems and emergency planning.

HES conducts its business from 27 response stations, including one EMS mega station, one HES mechanical site, one Fire service-training complex, and a separate facility for HES senior administrative staff that houses Fire and EMS. The paramedics are co-located with firefighters in 12 of the 27 response stations, which are strategically located throughout the city. The 12 co-locations each house one EMS unit. The paramedics have their own living quarters, and they share the garage with Fire. The EMS stand-alone mega-station houses all of the peak demand ambulances, paramedic response units, EMS supervisors, EMS operations managers, EMS continuous quality improvement (CQI) and EMS training program, and HES stores for Fire and EMS.

Emergency requests for EMS and Fire originate through a 911 call centre that the police service maintains. HES operates and governs the Fire dispatch centre. The provincial government, through the Central Ambulance Communication Centre (CACC),

dispatches and manages the deployment of HES EMS vehicles. The Ontario Ambulance Act Regulations and the supporting Ministry of Health Long-Term Care Standards Land Ambulance Standards provide the authority for this function. Following predefined criteria, the CACC also notifies HES Fire of specific emergency medical calls to provide a medical first response (City of Hamilton, 2004a). In 2004, the Hamilton CACC dispatched HES EMS to 53,395 medical calls, of which 90% were urgent or life threatening; and of these, EMS transported 35,217 patients. During the same year Fire was dispatched to 24,273 calls, of which 15,004 were medical assist and the remaining 9,269 were Fire rescue responses (Bulthuis, 2005).

HES probationary fire recruit training consists of 12 weeks of education in fire suppression, with one week dedicated to emergency medical education. In contrast, EMS paramedics receive two academic years of medical training, with no direct education in fire suppression. Although the emergency medical training time for a firefighter is considerably less than the medical education for a primary care paramedic (PCP), a comparative review of National Paramedic Occupational Competencies (NPOC) skills list reveals that the skills required in the services that the PCP is permitted to offer differ only marginally from those that the firefighter is allowed to offer. Hamilton firefighters perform automated external defibrillation (AED), cardiopulmonary resuscitation (CPR), basic airway management, oxygen therapy, and basic trauma life support; take patient histories; and evaluate vital signs; and a small number of firefighters have previously qualified as primary care paramedics.

The command structure for Fire is a hierarchal pyramid akin to a military model, as Clawson (2003) described it. Each Fire apparatus and every station has a supervisor

(captain). Stations form part of a district, and each shift has three district chiefs (DCs) who provide line support for the captains and firefighters. The DCs report to one of four Assistant Deputy Chiefs (ADCs). The other divisions, such as Fire Training, Fire Prevention, and Fire Mechanical, all follow a similar pattern in which staff report up the chain to the ADC and then generally back down the chain. Each division has its functional specialities “that are coordinated by the authority at the next level” (p. 212). The ADCs report to the Deputy Chief of Fire, who has line accountability to the Chief of Fire and EMS. The firefighters always have a supervisor with them directing and overseeing their work at a scene or in the station. Fire Suppression is a composite division of career and volunteer firefighters, with 430 full-time firefighters and approximately 230 volunteer firefighters.

The command structure for EMS is also a hierarchal pyramid; however, there is less frontline supervision. Within the supervisory structure, EMS applies an organizational matrix similar to what Clawson (2003) described, which includes project leads and functional leads working collaboratively. EMS does not have station captains, however, as Fire does; there are three district supervisors (DSs) on duty on each shift. The EMS DSs provide on-demand support to the paramedics at various scenes. The EMS DSs report to one of two designated EMS ADCs. The EMS ADCs report to the Deputy Chief of EMS, who is accountable to the Chief of Fire and EMS. Within EMS there are 42 full-time ACP positions, 108 full-time primary-care paramedics, and 30 part-time paramedics.

There are some key distinctions between Fire and EMS organizational practices. Whereas Fire has a supervisor at each fire scene and at the station, this is rarely the case for EMS. For the majority of time on shift, the paramedic acts independently of any direct

supervision. The paramedic has occasional interaction with a supervisor at a station or when a supervisor assists or supervises at an EMS call. The paramedics generally conduct themselves based on a prescribed list of tasks for station duties, HES EMS Standing Operating Guidelines, and the MOHLTC Basic Life Support Standards that inform their expected actions in completing a call. Paramedics are also supervised by the local medical authority (assigned by the MOHLTC) for the controlled medical acts that they perform. The vast majority of this supervision takes the form of retrospective chart review. Observers claim that the cumulative environment in which EMS operates creates an independent culture that is different from the fire culture, where close supervision is the norm. Weiss (1998) made similar observations on the cultural differences between Fire and EMS in his study of the New York City (NY) Fire and EMS integration. Adding to the differences between disciplines, the Fire DCs start their shift at the station within their district and focus on calls in their respective areas. The EMS DSs start their shift at the same location and then fan out to their respective areas or to locations they are needed; but more likely than not, their workflow is influenced, not by geography, but by project assignments for all service, not just for their district. Another noticeable difference is that, operationally, the EMS supervisor commonly, albeit briefly, works the calls for service. When EMS staffing is depleted, EMS supervisors become contingency resources, and they are deployed to individual patient calls to tend to the patient. It would be unusual for a DC to be dispatched or to choose to respond to a fire call with only one apparatus on site or as a first response to a medical emergency.

CHAPTER TWO – INFORMATION REVIEW

This chapter has two sections that include an organizational document review and a relevant literature review. The two reviews, collectively, should further frame the background of HES, expand on the HES problems and opportunities, and highlight the importance of the study.

Review of Organizational Documents

The organizational documents reviewed include (a) Ministry of Health, Long Term-Care, Emergency Health Services (2000), *New Operator Certification Package: Commitment to Proper Provision of Land Ambulance Services*; (b) Ontario Office of the Fire Marshall (1997), *Fire Protection and Prevention Act: Statutes of Ontario 1997*; (c) NFPA, 2003, *About Us*; (d) Peace (1999), *3-Year Business Plan: A Plan for the Reorganization of the Hamilton Fire Department*; (e) Regional Chairs of Ontario (1995), *In Pursuit of Better Government: The Provincial/Regional Partnership in Areas of Service Responsibility, Governance, and Financing*; (f) City of Hamilton (2004e), *Organizational Chart*; (g) City of Hamilton (2002), *Mission, Vision, Values, and Goals of the City of Hamilton*; (h) City of Hamilton (2000c), *Vision 2020*; (i) City of Hamilton (2000b), *Hamilton Emergency Medical Services: Transitional Implementation Plan*; (j) IBI Group (2000a), *The New City of Hamilton: Potential for Integrating Fire and Land Ambulance Services*; (k) IBI Group (2001), *EMS Organizational Review*; (l) HES (2004), *Organizational Chart*; (m) Peace (2002), *Hamilton Emergency Services: 3-Year Master Plan, 2002 to 2004: Report for Hamilton City Council*; and (n) City of Hamilton (2004a),

City of Hamilton: Road Map to Sustainability: A White Paper for Discussion on Objectives and Actions 2004-2009.

1. Ministry of Health, Long Term-Care, Emergency Health Services, (2000), *New Operator Certification Package: Commitment to Proper Provision of Land Ambulance Services*: This document outlines the minimum standards and guidelines that any business or organization seeking MOHLTC certification to operate an ambulance service in Ontario is required to follow. The document includes the Ambulance Act, Regulation 257/00, related to the provision of ambulance services, certification standards, documentation standards, communicable disease standards, and patient care and transportation standards. The contents of the document assume that those who operate the land ambulance are using traditional delivery models. A municipality that is considering other alternatives will face numerous obstacles. For example, the land ambulance standards do not recognize a Fire or Police first response at a medical scene even if those staff were trained and equipped as paramedics because there would be no means to provide funding support for the contribution, and the response time would not be recognized. The combined contents of the document illustrate a bias that supports a municipality's operation of EMS as a stand-alone division. The benefit of the document is that much of the content is in the form of standards. Therefore, if there is a will to liberalize the document, it can occur without requiring legislative changes.

2. Ontario Office of the Fire Marshall (1997), *Fire Protection and Prevention Act: Statutes of Ontario 1997*: This document outlines the standards for providing fire protection in Ontario, including the conditions of employment for firefighters, and it is

the authoritative reference for the firefighter's critical actions. If a Fire-med³ position were created, this document would assist in identifying training and functional gaps that would need to be closed to assist the disciplines in working in a blended capacity. The FPPA is not as restrictive as the Ambulance Act, and, as such, it is possible for some EMS functions (e.g., first response, including automated defibrillation) to be introduced into Fire (IBI 2000b). There could be further expansion of EMS functions within the Fire division without having to lobby for changes to the FPPA.

3. NFPA (2003), *About Us*: The NFPA is a nonprofit organization with an international presence develops and make recommendation on various Fire standards, including matters of research, training, staffing, deployment, and educational models. For example, the NFPA 1710 (NFPA, 2005a, 2005b) and NFPA 1720 (NFPA, 2005c) standards recommend minimum staffing levels for Fire apparatus for volunteer and career services. Fire is not obliged to adopt NFPA standards; however, the standards form part of numerous discussions and are regularly considered within HES. The NFPA has extended its scope to include EMS issues, which makes it a potentially influential organisation in Fire and EMS integrated models, a design that the NFPA supports.

4. Peace (1999), *3-Year Business Plan: A Plan for the Reorganization of the Hamilton Fire Department*: This document provides an overview of the old City of Hamilton Fire Department before the integration with the other six area fire departments that were largely volunteer services. It describes the old Hamilton Fire Department as a self-sustaining organization of career firefighters. The new parent organization merged

³ *Fire-med*: a staff member cross trained and certified to act as a firefighter and/or a paramedic.

the surrounding largely volunteer fire departments to become a singular complex agency. The document also informs the reader of the integration efforts within Fire and its intention to nurture a culture of change and collaboration.

5. Regional Chairs of Ontario (1995), *In Pursuit of Better Government: The Provincial/Regional Partnership in Areas of Service Responsibility, Governance, and Financing*: This document highlights, in general terms, the request by a collection of municipalities to integrate various public services where improvement opportunities were likely to exist. The integration of the ambulance service with the fire and police services was among their recommendations. This illustrates some level of community support for an integrated emergency service model. This document also generally supports restructuring public services to maximize effectiveness and efficiencies. Although it is not a research report, the consultation process with the major stakeholders and the Hamilton community was thorough.

6. City of Hamilton (2004e), *Organizational Chart* (Figure 1): This document highlights the organizational structures that support HES and the formal and functional lines of interaction between divisions, senior city administrators, and elected officials. The interdependencies of each division are apparent and consistent with the stated values in other city organizational documents, which supports a team approach to completing tasks and planning. The organizational chart indicates a top-to-bottom hierarchical design. The senior management team, led by a chief administrative officer (CAO), report and provide advice to the elected officials. The councillors set policy and, in turn, direct the senior management team to execute their plan. This is a governance model that Tindal

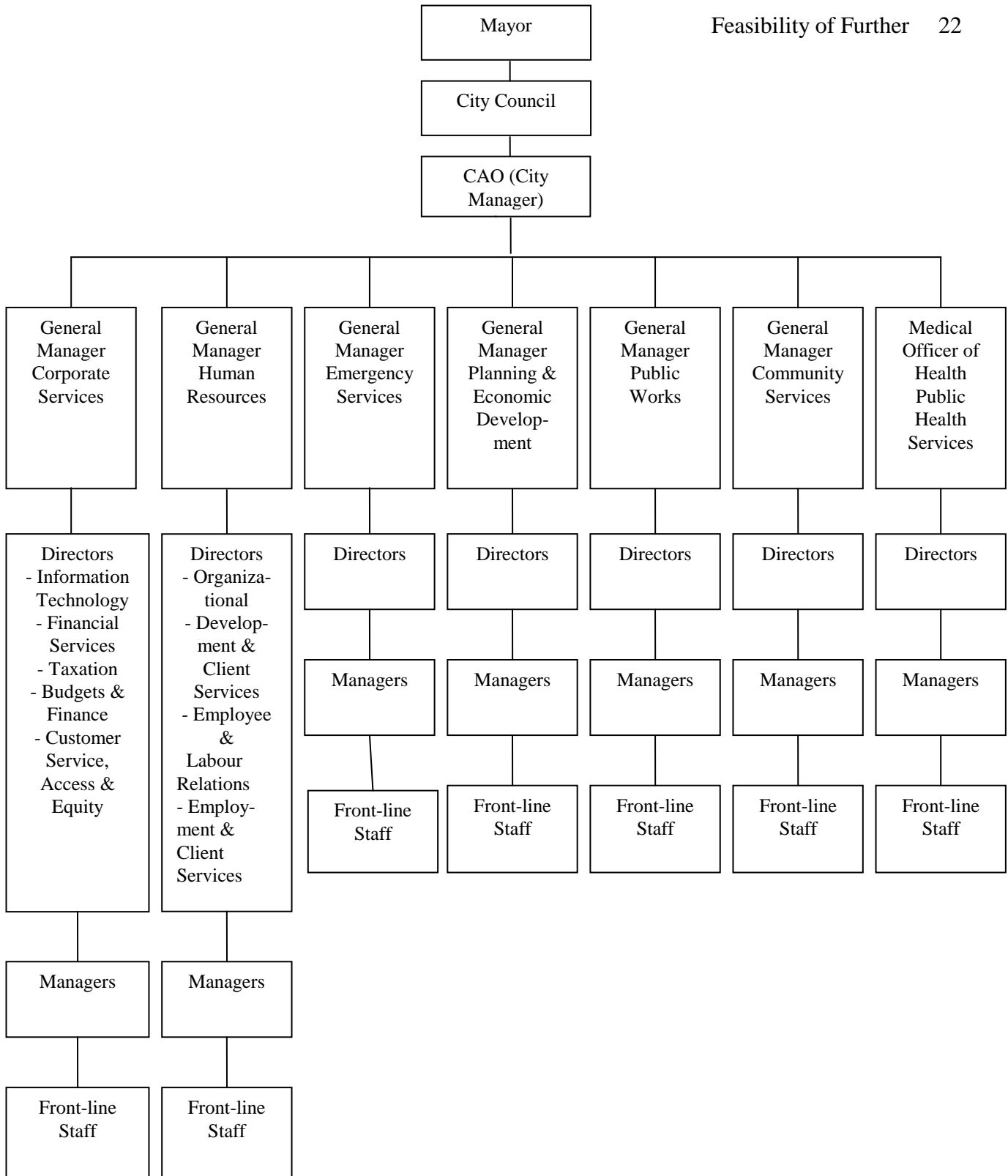


Figure 1. City of Hamilton (2004e) organizational chart.

[Brent, you need to reduce this figure to fit within the margins]

and Tindal (2000) identified as common to the province. A central pool provides support services to each department with a designated business agent. This model creates an interrelationship across departments and a dependency on the parent corporation. The interdependency should minimize the possibility of departments' becoming preoccupied with their own discipline, as Tindal and Tindal suggested. The key support services upon which HES draws include labour relations, legal, finance, human resources, corporate health, public health, health and safety, purchasing, information technology, communications, and facilities. With support services provided centrally, economies of scale are made possible by a shared labour pool.

7. City of Hamilton (2002), *Mission, Vision, Values, and Goals of the City of Hamilton*: In 2002, 2003, and 2004, City Council and the senior management team established and maintained this document, which describes a common mission, vision, and values for city employees to follow in all city processes and activities. Each city division is required to consider these statements in all activities and interactions with internal and external clients. The document emphasizes the principle that the city's business models should maximize effectiveness and efficiency while remaining sustainable. The increasing expectations of taxpayers for EMS and Fire present a challenge to the city administrators, who face revenue pressures across all departments. This makes the optimization of EMS and Fire an attractive consideration. Failure to resolve the pressures could lead to serious public harm and a loss of public confidence in its administration.

8. City of Hamilton (2000c), *Vision 2020*: This document provides a framework for all business planning by the city. All recommendations brought forward to the elected

officials must fall under review with consideration of the financial, environmental and social sustainability of the community. Any material changes to the HES structure should consider the impact on each of these areas to ensure or gain the support of senior staff and elected officials.

9. City of Hamilton (2000b), *Hamilton Emergency Medical Services: Transitional Implementation Plan*: This document broadens the understanding of the single-entity ambulance service within the municipal structure and the complexity of this service. In reviewing this plan with the existing Fire documents, it becomes clear that there are many similarities between Fire and EMS from a theoretical perspective, making integration a reasonable consideration.

10. IBI Group (2000a), *The New City of Hamilton: Potential for Integrating Fire and Land Ambulance Services*: This was a commissioned report for City Council to assist it in making a decision on whether to merge Fire and EMS. The report provided an unbiased analysis of various models of integration. IBI Group considered stakeholders' views and other variables that would facilitate or limit the success of various models. The recommendation played a key role in the municipal governance directing staff to proceed slowly with Fire and EMS integration, beginning with administration and support.

11. IBI Group (2001), *EMS Organizational Review*: IBI Group completed this report at the request of the Director of Emergency Services on behalf of the municipal government to conduct an organizational review of the EMS unit within the newly merged HES, an integrated Fire and EMS department. The report highlights the strengths and weaknesses of the initial organizational model. The consultant suggested that the suggested EMS senior management needed more experience and more resources to

operate an ambulance service and that they should adopt an organizational structure similar to that of the Fire Service.

12. HES (2004), *Organizational Chart* (Figure 2): This document illustrates the current HES structure, including Fire and EMS, and specifies the number of staff within each division. Fire employs the majority of frontline staff and support services workers. Similar to the city's organizational charts, this chart has a hierarchical pyramid design. The dotted line illustrates intended interdependencies and the integration of the broader administrative and support services.

It is noteworthy to consider that, in the 2002 HES organizational chart, the general manager retained the historical title of fire chief to comply with a provincial requirement. There has never been a parallel requirement for the title of ambulance chief in Ontario. In 2004, during the job competition for a new general manager of Emergency Services, the designation had changed to chief of Fire and EMS. The new organizational chart suggests equal status for both disciplines.

13. Peace (2002), *Hamilton Emergency Services: 3-Year Master Plan, 2002 to 2004: Report for Hamilton City Council*: This document provides an overview of the HES and a three-year overview of the service and applicable performance targets. EMS appears to have an equal presence in the document with Fire. Although EMS and Fire are not equal in size, budget, and service demands, Peace suggested that EMS received equitable consideration and standing within HES.

14. City of Hamilton (2004a), *City of Hamilton: Road Map to Sustainability: A White Paper for Discussion on Objectives and Actions 2004-2009*: This document

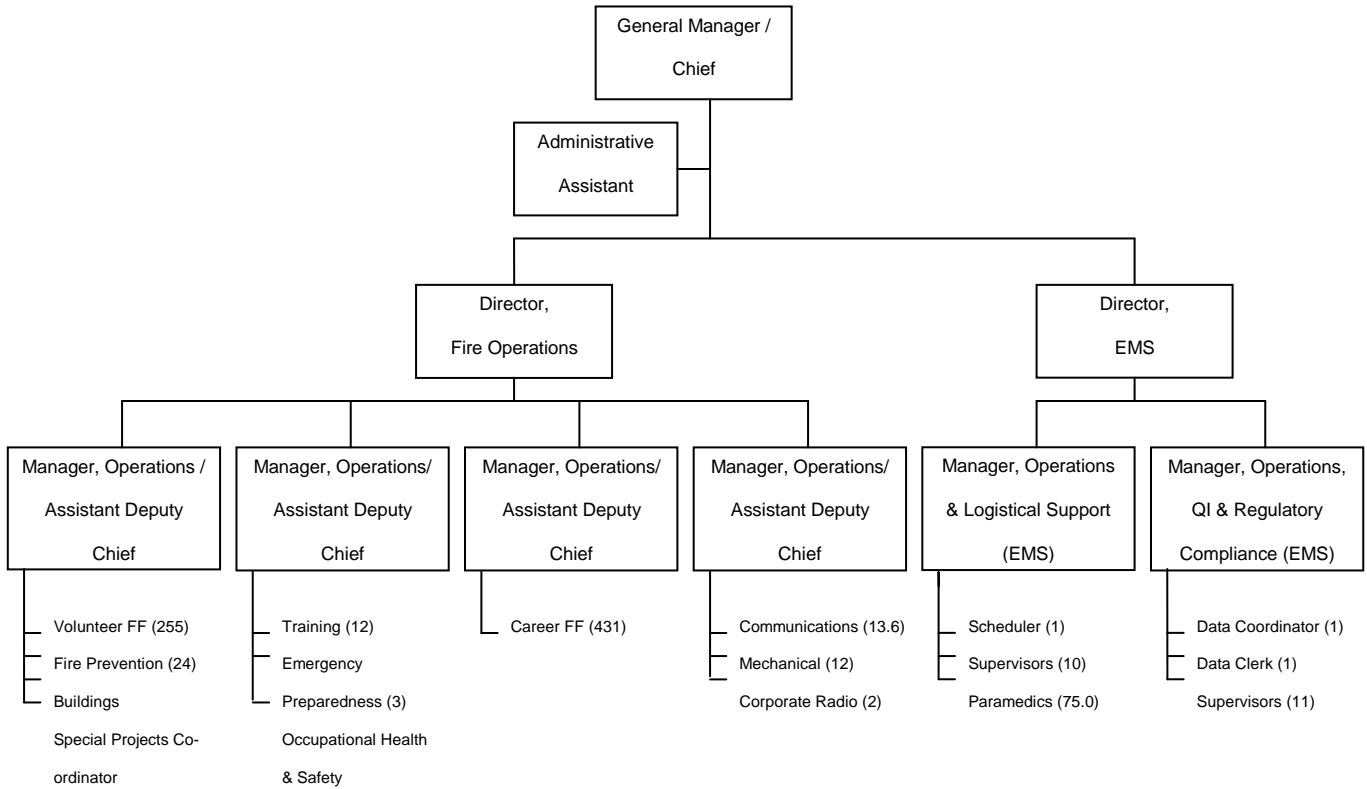


Figure 2. HES (2004) organizational chart.

[This figure needs to be narrower too]

provides an overview of the suggested objectives and actions for 2004 to 2009 for all divisions of the city, including EMS in a number of sections. One of the citywide objectives is to “pursue opportunities for better cost sharing of existing programs and services (e.g. EMS)” (p. 4). Further HES Fire and EMS integration requires that City of Hamilton agents reach a different agreement with the provincial government to share ambulance costs more equitably. Two sections in this report are particularly relevant. Objective 5 of the report is to “use evidence-based criteria to ensure that City programs are effective and efficient” and to “pursue technological and operational improvements to lessen the impact of operations on human health and the environment” (p. 8). Both statements compel staff to explore integration possibilities if it will improve the service,

lessen the staff level of effort, improve the environment, and save costs. Objective 6 states:

Within the City's Mandate, Improve the Health and Well-being of the Hamilton Community: Investigate innovative alternatives to standard practices of care that involve HES in partnership with community health care providers, to improve access to services for those who are homeless, marginally housed, drug and or alcohol addicted, mentally ill, elderly and the socially isolated. (p. 11)

This objective has the potential to foster some level of integration, perhaps a strategic alliance, with public health and social services. Kouzes and Posner (1997) suggested that one of the key leadership conditions in the success of modern organizations is to challenge the process, and the direction noted in the White paper creates a leadership challenge for HES EMS to consider new paradigms.

Review of Supporting Literature

This section is a review of the literature with regard to (a) what level of Fire and EMS integration might be feasible based on the experience of others; (b) the general results of integration in the form of a strategic alliance, merger, or acquisition, and (c) the leadership opportunities in a strategic alliance, merger, or acquisition.

First Key Concept Area: What Levels of Fire and EMS Integration

Are Feasible in Hamilton Based on Other Experiences?

This section of the literature review considers the experiences of other jurisdictions in Fire and EMS to assist in framing the considerations of this study project.

First Subtopic: Common Levels of Fire and EMS Integration

The existing level of integration in Hamilton is a model of shared support services and administration. In addition, this model currently exists in Edmonton after the predecessors explored other, more integrated models, according to Matheson and Sims

(1997). Within this level of integration the organization has numerous options, including co-locating stations and sharing mechanical services and shipping and receiving.

Edmonton and Hamilton both share other support services that the centralized municipal government pool supplies, such as legal services, information technology, purchasing, finance, human resources, and labour relations.

Monosky (2003) reported the results of a US survey that include a comprehensive and descriptive list of the various levels of Fire and EMS integration at an operational level. These include (a) first response, (b) Fire operating the EMS transport system as a separate division of the Fire Department, and (c) Fire operating the EMS transport system with dual-trained staff who can function as firefighters or paramedics. In the US “nearly 97% of the first response in the 200 most populous cities are handled by the Fire Department, multi-role personnel” (p. 37). Monosky reported that, of the services included in his survey, 29% of the fire departments were providing EMS, including transportation.

Slevinski (1998) described a similar variation in models in Florida. In an earlier Fire and EMS review that Belton, Fortner, and Spinner (1982) conducted for the City of Calgary, they suggested that there are some common integration models, including (a) operational integration including transportation, (b) a single emergency service department with separate fire and EMS divisions, and (c) Fire involved in medical first response and providing various levels of care. McManus (2001) reported that approximately 17,000 Canadian firefighters performed first-response to medical calls and Fire-transport ambulance patients in Winnipeg, Red Deer, Lethbridge, and St. Albert (Pendergast, 2003).

Regarding the model of Fire first response, McNamara (1999) and Hunt (1995) challenged the use of firefighter first response and suggested that, instead, the same money should be used to pay for EMS first response. Although that may benefit EMS performance, they did not explain how Fire would then have sufficient fire apparatus to meet the emergency response coverage zones. Considering the benefits of moving Fire resources to EMS without considering the impacts on Fire suppression coverage defies the principles applied in systems thinking that Yukl (2002) described, where a solution to one problem may create another problem and potentially make things worse. Pepe (1996) supported the role of a fully integrated fire first response and asserted that responding to 75,000 calls per year cost the city “\$350,000 to \$400,000 per year, the approximate cost of operating only one of the current fleet of 50 municipal ambulances . . . that were responding to 140,000 in 1990” (pp. 45-46). Similarly, Fitch (2004b) claimed “rapid defibrillation by first responders has repeatedly demonstrated the ability to reduce morbidity and mortality. It has been shown to be a simple and cost-effective method of improving survival rates in cardiac arrest” (p. 517). The involvement of Fire in EMS first response is a model that can offer various levels of care from basic first aid up to and including advanced care by paramedics. In Hamilton, Fire has been providing tiered response since the early 1980s, and the model currently includes first aid, CPR, and automated defibrillation.

For this project I have categorized the levels of integration as (a) support service and administration integration while operating Fire and EMS as separate divisions; (b) tiered response assistance, which may include dual-trained fire-medical (partial operational integration); and (c) operational integration, in which some or all of the

frontline staff are dual trained as fire-medics and operate ambulances and fire apparatus. Because HES, the sponsor organization, had sought advice on further integration, I did not find it relevant for this project's purposes to investigate the dismantling of the existing integration model. The starting point for this project was to consider the remaining opportunities for enhancements in tiered response, also called *first response* (IBI 2000b; Williams, 2006); further support and administrative service integration; and then operational integration.

Second Subtopic: Fire And EMS Integration: Potential Advantages and Disadvantages

Based on my literature review, I have identified some advantages of integration discussed in this section: (a) improved efficiencies that result in financial savings, and (b) enhanced effectiveness through improved response time performance. I was able to identify some labour issues with Fire and EMS integration efforts; however, I believe that they could all be reasonably resolved, and I have discussed them in the obstacles section.

Many authors have noted that the potential for financial savings is one of the key advantages that numerous municipalities consider in Fire and EMS integration (Cusipag, 1998; Haley, 2004; KDKA-TV, 2003; Levine, 2002; McManus, 2001; Sachs, 1997a; TriData, 2000; Williams, 1995; Wohlitka, 1999). Some contributing factors that may account for the potential improved efficiencies in Fire and EMS mergers include sharing common staff administration, support services, facilities, and the potential benefits of "flexible staffing" (Pendergast, 2003, p. 10).

Although flexible staffing may have been a reason for integration, given the wide wage differentials between the firefighters and the paramedics, some areas viewed dual training as an obstacle to integration because the pressure to advance paramedics' wages

might be greater (City of Edmonton, Ambulance Services Steering Committee, 1992; Ernst & Young, 1996; Hunt, 1995; IBI Group, 2000a; KDKA-TV, 2003; McNamara, 1999). However, because Ontario downloaded the ambulance service to the municipalities, the wage gap between the two disciplines has substantially narrowed, and the notion of staffing flexibility therefore has increasing relevance (M. Mason, personal communication, February 27, 2006). Pittard (as cited in Earle, 1998) summarized the potential financial savings with Fire and EMS integration: (a) in economy-of scale-purchases, (b) in eliminating duplication of effort, and (c) in direct community savings based on better fire insurance ratings, which results in lower fire insurance costs.

A number of authors gave examples of a consensus observation that Fire has the resource capacity to contribute to EMS effectiveness by reducing the emergency medical response times (Becknell, 2001a, 2002a; Earle, 1998; Ernst & Young, 1996; Fiero, 1991; KDKA-TV, 2003; Levine, 2002; McManus, 2001; Pepe; 1996). As previously noted, Hunt (1995), based on a historical review of integration attempts in Edmonton, Alberta, and McNamara (1999) based on a critical appraisal of related literature, both disputed the benefits of integration and claimed that the better solution is to add EMS resources and not to rely on Fire for assistance. Lending support to Hunt and McNamara, Chesterfield County, Virginia, Board of Governors (2001) reported that the merger of Fire and EMS in their county threatened Fire's performance because of the skyrocketing number of EMS calls.

Third Subtopic: Fire And EMS Integration: Potential Obstacles and Opportunities

This section addresses the obstacles to and opportunities for Fire and EMS integration that I noted in my review, which include the following: (a) labour issues that

require resolution, (b) cultural variances that could create an obstacle, (c) the potential dominance of Fire over EMS that could become an obstacle, and (d) leadership practices that may create obstacles or opportunities.

The lack of a single union for Fire and EMS labour relation challenges inherent in a merged organizational structure is likely to be a disadvantage with regard to stand-alone structural models. Unions seek to protect work that they believe belongs to their units. Separate unions for Fire and EMS integration attempts are likely to precipitate a challenge from the union movement. In Ontario, when the province downloaded EMS in 2000, the municipality of Owen Sound attempted to integrate Fire and EMS. Initially, there was strong local political support for the change; however, the paramedics met the elected officials and the employer with strong labour opposition and took the case to the Ontario Labour Relations Board (OLRB). Initially, the OLRB ruled that the project could not proceed without a formal plan on achieving integration. The municipality returned to the OLRB with a five-year plan that resulted in the City's receiving approval to proceed (OLRB, 2002; J. Saunders, personal communication, September 13, 2005). However, in the intervening period the paramedics' union had effectively lobbied against the model during a municipal election, and it became a political platform. The will of the successful elected officials no longer supported integration, and the City abandoned the plan. Labour relations and political considerations can have a material impact on the feasibility of a community's being able to integrate Fire and EMS services.

Another potential obstacle to the integrated Fire and EMS model is conflict between cultures, which others have noted (KDKA-TV, 2003; Weiss, 1998). In his article on a Fire and EMS merger in NY, Weiss described the fire culture as based on teamwork

and interdependency, whereas in EMS the paramedics' culture is independent, but the paramedics' work complements that of their peers. Weiss explained that there was no appreciation of the diverse cultures in the NY merger, and Fire dominated EMS within the organization, which resulted in a rapid decline in EMS morale and EMS response times. The leaders quickly recognized the issues and reconfigured their practice to respect the differences in culture. With EMS input leading the revised scheme, the EMS performance and attitude rebounded. Richardson (1996) suggested that the "cultural differences within the new organization are mitigated by the creation of a new culture which eliminates the us and them dichotomy prevalent when differences are fostered through separate organizational functions" (p. 62).

A change in leadership style during an EMS and Fire service integration initiative is a key determinant of its outcome, which can present either an opportunity or an obstacle to its success. Various reports highlighted the need for trustworthy, participatory, and open leadership when seeking to integrate Fire and EMS (City of Edmonton, Ambulance Services Steering Committee, 1992; Gaull, 2000; Hunt, 1995; IBI Group, 2000a; Matheson & Sims, 1997; Murphy, 1994). Leadership practices that were identified as interfering with the success of integration included that the project initiative was akin to acquisition, with Fire taking over EMS, and that business decisions made by the senior staff favoured Fire to the detriment of the EMS staff (City of Edmonton, Ambulance Services Steering Committee, 1992; Hunt, 1995; Matheson & Sims, 1997; McNamara, 1999; Davis, 2003; Weiss, 1998; Williams, 1995). An example of unrewardingly leading lead change, Williams noted that an early attempt to integrate Fire and EMS in Edmonton ended in abandonment of this integration model. The efforts resembled an acquisition by

Fire and the dominance of one discipline over another, not the preferred participatory approach to such a transition. Based on numerous accounts, it seems an unbiased leader who executes a collaborative change process can create opportunities to extend the success of a Fire and EMS integration project, and conversely, ineffective and inappropriate leadership practices can become a critical obstacle to an integration initiative.

Summary of Literature Review: First Key Concept

The categories of Fire and EMS integration models that are the subject of this study will include (a) expanded sharing of administration and support functions and (b) the increased tiered-response role by training firefighters in more medical skills to ensure one qualified fire-medical on each fire apparatus (partial operational) and full operational integration (fire-medicals on fire apparatus and ambulances). The various experiences of Fire and EMS integration revealed in the literature review yielded divergent views. Wherever integration has enjoyed less than expected results, further research may assist in an understanding of whether the failure was a result of the level of integration sought or the approach to the integration process. A generic review of the other integration models will be the subject of the next discussion.

*Second Key Concept Area: Integration in the Form of
a Strategic Alliance, a Merger, or an Acquisition*

Many organizations regularly and freely collaborate in the public and private sector on common initiatives with the intention of maximizing their results relative to the effort expended, including Fire and EMS, as Sachs (1997a) noted. Other authors have reported that there are opportunities to share skills and knowledge, create synergies

during the effort, and promote competitive innovation because each agency closely observes the performance levels and relationships of the other (Hamel, Doz, & Prahalad, 2002; McGehee, 2001). For the purpose of this project, I am using the term *collaboration* to refer to an initiative that is limited in its degree of integration and is time or project limited, and the partner organizations remain as legal business entities. In the municipal sector, for example, following a rash of arsons, the police service may choose to collaborate with Fire to educate the public and improve the impact of their public service announcements and the chances of solving the crimes. This study focuses on the levels of integration that extend beyond collaboration.

To achieve a more structured approach than a collaborative effort, an organization can engage in a strategic alliance or a mutually agreed-to merger or can be a participant in an acquisition in which one of the organizations takes over the other(s). The balance of the literature review explores these three generalized approaches to consider experiences beyond the limits of emergency services and with the intention of triangulating the findings and broadening the utility of any recommendations.

First Subtopic: The Characteristics of a Strategic Alliance, Merger, or Acquisition

A strategic alliance is a more formalized version of collaboration in which two or more organizations choose to integrate some of their functions without legally amalgamating the companies. The alliance should “reflect the commitment and capacity of each partner to absorb the skills of the other” (Hamel et al., 2002, pp. 4-5). “The partners’ strategic goals converge while their competitive goals diverge,” and “neither side invades the other’s market” (p. 7). A strategic alliance is generally time limited, although most will end up as an acquisition by one of the partners, with the “median life

span of an alliance being seven years” (Bleeke & Ernst, 2002a, pp. 24-25). Within the Hamilton area, an example of a public sector strategic alliance involved two hospitals, Hamilton Health Sciences and St. Joseph Hospital, which mutually agreed to a business partnership. Both organizations have multiple business sites and share services and expertise such as purchasing, cardiac care, trauma care, and so on. The alliance provides stability for each organization by allowing them to focus on their area of expertise and avoid competing for public funds for the same programs.

A merger is a formal, more encompassing, and generally longer lasting relationship than a strategic alliance. In a merger, two or more businesses legally intertwine to form one broader organization, as Brown, Greenwood, and Hinings (as cited in Williams, 1995) explained. Although separate divisions may still exist under the merged umbrella company, generally, the level of integration will be more extensive than in a strategic alliance. Mergers may be entered into voluntarily, although Bleeke and Ernst (2002a) noted that, for some, the merger may seem a matter of necessity. An example of a public-sector merger was the formation of Hamilton Health Sciences. Its genesis was the merger of four not-for-profit hospitals. The Henderson Hospital initially merged with Hamilton General Hospital and later joined Chedoke Rehabilitation Hospital and McMaster University Medical Centre. The four original hospitals now represent one merged legal entity, Hamilton Health Sciences. Its mandate is to provide shared leadership, infrastructure, and strategic resources. It is similar to a strategic alliance in that this initiative was an effort to rationalize and consolidate services to eliminate duplication. However, it differs from the strategic alliance in that the new organization

will have the authority to engage in broad strategic planning and integration across all sites and divisions based on a shared vision (Krell, 2001).

Brown et al. (as cited in Williams, 1995) described an acquisition as a forced merger of one or more minority organizations into one parent legal entity. An acquisition is similar to a merger: The businesses are legally linked with a goal to rationalize and consolidate services; however, the parent company has unilateral authority to impose broad, sweeping changes. The level of integration of the organizational structure, culture, and staff will frequently result in more dramatic changes than those seen in a merger or a strategic alliance. Although it is desirable to seek out and consider input from the company that has been acquired and its staff, the parent organization will have the primary influence and the legal authority to execute integration (Ashkenas, DeMonaco, & Francis, 2001). A recent example of a public sector acquisition would include Niagara Region EMS takeover of the ambulance dispatch. The Ontario Government's Ministry of Health Long-Term Care divested itself of the ambulance dispatch operations and direct governance through a tender process, and the Niagara Regional Government was the successful bidder. Niagara EMS, responsible for the land ambulance program, acquired the responsibility to operate the dispatch service. The same public safety leader swiftly imposed a new organizational structure, processes, and culture and hired new staff to radically change the manner in which it conducted business and aligned it with the needs of the parent organization, the Niagara Region.

In conclusion, there are notable differences in the constructs of a strategic alliance, merger, or acquisition. A strategic alliance would be more appropriate if the integration initiative will not likely be a permanent program and it is an equal partnership. A merger

is a more permanent business partnership of equals, agreed upon freely. The acquisition of a business is a forced integration model, and, typically, the arrangement is permanent. One should consider the environment in which one is operating and the intended outcome of the integration initiative to be able to inform the leaders which model may be appropriate to their circumstance.

Krell (2001) reported that “as many as two thirds of newly merged companies fail to generate a greater market value,” and, further, that “what looks promising on paper often fails in practice” (p. 68). Before proceeding with an integration project, the leaders should consider the potential risks and benefits. The remainder of the literature review explores the advantages and disadvantages of alliances, mergers, acquisitions, and major change initiatives to consider the value of the proposition; this is followed by a review of the obstacles to and opportunities for proceeding with the change.

Second Subtopic: Advantages and Disadvantages of a Strategic Alliance, Merger, or Acquisition

Some advantages to integrating business entities through a strategic alliance, merger, or acquisition that emerged from my literature review includes (a) the capacity to keep pace with changes creating new efficiencies, (b) enhanced effectiveness through coordinated opportunities, and (c) a strengthened business identity.

Numerous authors have noted that integrated companies have new capacity through pooled resources to adopt a particular technology or technique that they would not have achieved separately as smaller singular entities (Chesbrough & Teece, 2002; Hamel et al., 2002; Kanter, 2002). As an example, prior to the downloading of the ambulance service, there was no singular means through which the ambulance service

managers could convey educational materials to all staff and know that they had received it. With the merger of the four local services into one entity, not only were all stations upgraded with fax machines, but each station was also equipped with a computer, the paramedics received their own e-mail address, and all were connected by a singular municipal network. This level of efficiency was not previously possible or provided by any of the singular agents.

When innovation requires a series of interdependent innovations, “independent companies will not usually be able to coordinate themselves to knit those innovations together” (Chesbrough & Teece, 2002, p. 160), whereas a merger or acquisition of companies can provide the necessary overarching leadership and enduring coordination. This concept extends beyond the benefits of efficiency created by the capacity of integrated organizations to include the effective coordination of initiatives. As an example of this concept, prior to the amalgamation of the city, Hamilton was served by one career fire service and multiple volunteer fire departments that shared emergency resources and specialized functions through mutual aid agreements. The integration of all of the fire departments into the new legal entity of HES improved the sharing of resources between career and volunteer divisions and the emergency response capacity, extended the mechanical reliability of the vehicles and equipment, and established new techniques for resource allocation. As testimony to the success of the integrated service, HES Fire maintained its Class 1 fire insurance rating across the fully merged city, which had previously not been realized by five of six districts.

“In a global economy, companies are known by the company they keep” (Kanter, 2002, p. 126), and “the connection offers the parties an option for the future, opening new

doors and unforeseen opportunities” (p. 100). The merger between EMS and Fire in Hamilton serves as a working example of this benefit. In a public survey that the City of Hamilton conducted in preparation for the 2004 budget process, the city administration asked the citizens which service they felt was the most important to them, and they ranked Fire and EMS as number two and number three, respectively. The collective synergy created by these results can provide currency in municipal politics. In a review of the Phoenix Fire Department EMS system, Belton et al. (1982) quoted the chief at the time: “EMS has been an incredible public relations thing for the Department. It accounts for 65% of our activity” (p. 31). Tindal and Tindal (2000) underscored the importance of this opportunity and noted that the influence of public opinion can be a significant factor when elected officials are making strategic decisions, including setting annual departmental budgets and providing other like support for city programs.

My literature review of a strategic alliance, merger, or acquisition revealed some potential disadvantages of these integration initiatives: (a) an increase in organizational conflicts, (b) various new demands on time for managers and others, and (c) limits to divisional independence.

“Conflict is the rule, not the exception” when two or more organizations form a strategic alliance or a merger and one of the partners wants “to expand their core business on the same set of geographical and product opportunities” (Bleeke & Ernst, 2002a, p. 32). When HES initially integrated Fire and EMS, there were conflicts while the organizational structure was being established in determining which division would take the lead for the different business functions. When the roles of each division were defined and a structure was created that was congruent with a message of divisional equity, the

level of conflict abated, which was evident in the reduction of interdivisional relationship complaints. When early conflict arises, it requires an immediate commitment of time to adequately explore and implement effective techniques to minimize the possibility of a lasting culture of strained relations (Austin, 2000).

Nanda and Williamson (2002) claimed that a strategic alliance requires “more of management’s time and attention” (p. 65) than single ownership does, especially in the early stages of the alliance. The additional time may be consumed by managing the conflicts, duplicating communication efforts to keep multiple leaders informed, or having to clarify contradictory signals from the partner organizations (Nanda & Williamson, 2002). Kanter (2002) asserted that alliances “cannot be controlled by formal systems, but require a dense web of interpersonal connections and internal infrastructures that enhance learning” (p. 100). These demands draw on the time of all levels of staff. The experience of Hamilton Fire has been consistent with this assertion. Prior to integrating the six fire departments into a single organization, the old City of Hamilton maintained mutual aid agreements with all of the smaller-area fire departments as a strategic alliance to share services when one of the partners had no resources. However, although the benefits outweighed the time investment, maintaining multiple alliances required a significant commitment from senior staff.

When an organization joins an alliance or any relationship that incurs higher levels of integration, there may be a reduction in the ability to think and act independently if the organizations have to subordinate their own interests to those of the alliance (Gomes-Casseres, 2002). Kanter (2002) acknowledged this phenomenon and suggested that leaders should advance the change initiative through “equity swaps” (pp. 111-112)

while allowing each organization to enjoy some of its own independence, although some independence will diminish. When the area fire departments merged to create HES, individual departments performed higher levels of emergency medical care. To ensure the consistency and sustainability of the training, some stations had to increase their training, whereas others needed to constrain their aspirations to ensure a consistent approach across the organization.

I have noted a similar number of advantages and disadvantages that businesses that have engaged in an alliance, a merger, or an acquisition have experienced. Organizational leaders who are considering integrating their business with another may benefit from reflecting on these findings and other knowledge that they possess in context with their preliminary vision of integration and the outcome that they are seeking to achieve from the scheme.

Third Subtopic: Obstacles and Opportunities of a Strategic Alliance, Merger, Acquisition, or Major Change Initiative

Having reviewed the expected advantages and disadvantages of integrating a business through a strategic alliance, a merger, or an acquisition, if an organization remains interested in pursuing an integrated model, the next considerations are the obstacles that it may encounter and the opportunities that may present themselves. In this section of the literature review I have also considered information related to major change initiatives, given that any level of integration represents a commensurate level of change.

Based on my literature review, I will first identify some of the obstacles to a strategic alliance, merger, acquisition, or major change initiative: (a) limited information and time to decide whether the organizations should integrate, (b) cultural differences,

(c) insufficient staff motivation and resources to transition, (d) insufficient leadership throughout the organization to successfully execute the change, (e) staff resistance to change, and (f) inequality between the partners.

Eccles, Lanes, and Wilson (2001) suggested that, although the cost savings and process improvements created by an alliance, merger, or acquisition may be easy to understand conceptually, they are hard to forecast accurately if time and information are limited. However, there is also a need to proceed promptly to a final decision to retain key staff who will be essential in leading the change process. Nanda and Williamson (2002) asserted that “labelling a business’ for sale’ may result in distracted employees” (p. 49). Leschly (as cited in Carey, 2001) noted that “the potential for an exodus of talent is very real” in a merger and cautioned that it is “even more real in a hostile takeover” (p. 18). Although it is critical to move quickly with a merger plan, the experts also warn that that is imperative to take the time to critically appraise the proposal and consider all reasonable arguments (Anders, 2002; Eccles et al., 2001). A balanced approach to making timely decisions on the strategic direction of the organizations is essential to the continued viability of the organizations, separate or merged. Unfortunately, if the resources are not available to conduct a prompt yet comprehensive assessment, the potential opportunity to integrate may have to be forsaken.

Kanter (2002) claimed that after a merger has taken place, operational and cultural differences materialize in areas of authority, reporting, and decision-making styles: “what people get involved in decisions; how quickly decisions are made; how much reporting and documentation are expected; what authority comes with a position; and which functions work together” (p. 115). Even if the rationale for the merger is well founded, it

can still fail because of the cultural differences (Leschly; as cited in Carey, 2001; Krell, 2001). Although Kozlowski (as cited in Carey, 2001) reported that he has “never seen a deal fall apart on a cultural issue” (pp. 12-13), he acknowledged that reconciling the different cultures can be a great deal of work. Greenberg et al. (1996) discussed “several cases in which the merger of two organizations with incompatible cultures leads to serious problems” (p. 508). Before and while the structural changes are occurring, cultural differences should be explored and managed. Many authors on this subject have agreed that it is important to engage all levels of staff throughout the process of discovery and the creation of plans to bridge the gaps (Ashkenas et al., 2001; Chapman, 2004; Kanter, 2002; Nanda & Williamson, 2002).

In a merger, an active acquisition, or a change initiative, managers are able to give their personal attention to only a small portion of them in the network (Gomes-Casseres, 2002); therefore, at a time when management demands are greatest, they are least available as a support resource. When Metropolitan Toronto and six area local municipalities amalgamated in 1998, the managers who remained with the new city were often referred to as *survivors*, and they were labelled as being angry and stressed and avoiding risk. The managers were working more hours, experiencing more stress and fatigue and reduced work quality, and had a greater need for learning time (Kelman, 2000). Murray and Richardson (2003) conducted a study of 30 organizations involved in major change initiatives, and the executives felt that inadequate resources were one of the key factors in the organization’s failure.

Frontline supervisors are frequently assigned to implement the integration at a grassroots level; however, they can be amongst the least prepared and interested in its

success. Murray and Richardson (2003) noted that unless the supervisors have been directly involved with the transaction team, they are not likely to be as visionary as the senior staff, and they lack exposure to the other organizational culture.

Further challenging the enthusiasm of the frontline supervisor and other staff is the added workload. In some cases, staff will be directed to follow existing processes to execute their assigned functions while running parallel tests on new processes, which essentially duplicates work (Dunford, 1992). It is common that during the transition period these staff may be required to complete their regular procedures while developing and/or learning new ways of doing things. Kanter (2002) also warned that there may be a lack of sufficient leadership and motivation by staff that are in professional groups whose discipline has conventions that may not fully align with the practices of the new organization (p. 114).

Norman Augustine (1998), the surviving CEO of the merged Lockheed Martin, reported from his experience that, if management has to force restructuring, it is a sign of impending problems. Reflecting on the descriptions of an alliance, merger, and acquisition, in that order reveals that the potential for resistance increases. In Hamilton, during the 2003 EMS education sessions, the paramedics participated in group discussions on their perceptions of the current HES Fire and EMS integration model. The paramedics in all 16 classes cautioned that if further integration were forced, it would precipitate unified resistance. Connor (1995; as cited in Yukl, 2002) identified common reasons for resisting organizational change: (a) a lack of trust; (b) a belief that change is unnecessary and unfeasible; (c) the threat of lost income, benefits, or job security; (d) a relatively high cost to implement the change, which may include performance reductions

during the transition; (e) fear of personal failure; (f) a threat to values and ideals, and (g) resentment of forced change. Murray and Richardson (2003) found that a contributing factor in an unsuccessful change initiative is the leaders' failure to deal with saboteurs or nonperformers. A number of authors advised that the organizational leaders use the resistance to change as an opportunity to consider adjusting their plans and redirecting the energy of pessimists to the energy of collaborators to strengthen the project (Jick, 1993, as cited in Yukl, 2002; Maurer, 1996, as cited in Yukl, 2002; Senge, 1999).

In entertaining a strategic alliance, merger, or acquisition, leaders should consider the intended balance of power and responsibility of the relationship. In an unbalanced merger, both partners will typically fail, because the perceived underdog will have little incentive to follow through with commitments and facilitate the success of the initiative. Experience suggests that a partnership of two weak organizations will result in both of them growing weaker, according to Bleeke and Ernst (2002a). Drawing on time and resources to manage the partnership and being distracted while correcting the weaknesses of one of the partners can contribute to a failed union. Establishing collective norms of interaction and values and have a "shared sense of significance" are essential to creating an integrated community (Austin, 2000; Wheatley & Kellner-Rogers, 1998). An assumption of equality, with all parties making valuable contributions to the new organization, facilitates the growth of mutual respect and trust that is essential to a successful collaborative initiative (Anders, 2002; Austin, 2000; Kanter, 2002; Kouzes & Posner, 1997; Linden, 2003). These principles are achievable in the form of an alliance, a merger, or a participative change process; however, in an acquisition the changes will be more directed. Although an acquisition change process on face value may seem more

efficient, it lasts only as long as the formal leader pushes the system. In some circumstances an acquisition may be the preferred option; however, a strategic alliance or merger of equals in which individuals have the freedom to design, initiate, and implement change themselves, Senge (1999) suggested, creates a more sustainable, robust organization.

The various obstacles that I have described based on the experiences of other organizations during alliances, mergers, or acquisitions provide useful lessons for other agencies that might be considering integrating their services or businesses.

The next section focuses on the opportunities identified in my literature review that may enhance the potential success of an alliance, a merger, an acquisition, or a change initiative: (a) effective leadership, (b) effective change management, (c) a prompt focus on needs of the staff, and (d) harmonious labour relations.

Fundamental to any change initiative, it is incumbent on the leaders to ensure that they have developed a clear vision, a strategic plan, and objectives. Collins and Porras (1998) suggested that “companies that enjoy enduring success have core values and a core purpose that remain fixed while their business strategies and practices endlessly adapt to a changing world” (p. 22). This concept extends beyond the change initiative, and several business authors have reported that enduring successful companies ensure that they have a clear shared vision, a strategic plan, and agreed-to objectives (Austin, 2000; Corporate Board, 2001; Hamel et al., 2002; Kanter, 2002; Kotter, 1996; Kouzes & Posner, 1997; Krell, 2001; Murray & Richardson, 2003; Yukl, 2002). These same authors discussed the importance of a shared vision in maintaining a committed workforce, which highlights

the escalating leadership challenge of sustaining the success of the new organization if the integration is a forced acquisition.

To ensure the success of any integration initiative or major change, support and approval are essential across the spectrum of the organization's employees, including the senior officials. Beyond the internal audience, the support must extend to the linked agencies, related partners, and public. The means of attaining and maintaining the support, as a number of authors have suggested, is to include all of the relevant constituents as meaningful contributors throughout the change process (Austin, 2000; Chapman, 2004; Corporate Board, 2001; Dunford, 1992; Kanter, 2002; McGehee, 2001; Murray & Richardson, 2003; Yukl, 2002). Kanter advised that "strong interpersonal relationships help resolve small conflicts before they escalate" (p. 121). By focusing on "relationship activities" during the change activities and drawing on the resources of the primary partners, common goals can be equally represented, and these strategies ensure broad participation and inclusion (Holbeche, 2001; Kanter, 2002; Linden, 2003).

A robust communication plan that reaches all affected staff and external agencies and continuously interacts with the audience is essential to the success of a major change initiative to build and maintain the necessary support. Numerous authors supported these principles as an essential intervention to a successful change process (Anders, 2002; Ashkenas et al., 2001; Austin, 2000; Chapman, 2004; Dunford, 1992; Holbeche, 2001; Kotter, 1996; Krell, 2001; Linden, 2003; Murray & Richardson, 2003; Yukl, 2002). Huhn (1997), using action research methods to study Fire and EMS integration, suggested that many problems can be avoided with positive communication strategies and staff involvement. Electronic mail and group voicemails serve as excellent communication

tools that should be applied for concise and consistent messaging and as equalizers amongst staff (Palloff & Pratt, 1999). Teleconferencing is an interactive means of communicating in small teams when time and distance create impediments. It is essential to complement this with face-to-face interactive dialogue. Leaders of change should consider a variety of communication tools and mediums to convey their messages repeatedly and to various audiences to the point that the audience becomes tired of hearing about the change (Duck, 1998; Krell, 2001; Holbeche, 2001; Mackeracher, 1998).

Once the decision has been made to create a strategic alliance, merger, acquisition, or major change initiative, the immediate focus should switch “to people and processes” (Carey, 2001, p. 14). In an alliance, merger, or acquisition in which the concept was the brainchild of the managers, they will begin their new task with a period of excitement; however, those who were acquired will be preoccupied with their identity and job security (Ashkenas et al., 2001). Most people want to know what will happen to them personally, first and foremost—a trend that various subject authors identified (Carey, 2001; Murray & Richardson, 2003; Strebel, 1998). Decisions and declarations on organizational structure, key roles for staff, reporting relationships, layoffs, restructuring, and other career aspects of the integration should be made, communicated, and implemented as soon as possible and handled with respect. These actions are required to provide the framework to guide the integration, and they are critical to retain and attract top performers to lead the organization through the change process (Ashkenas et al., 2001; Chapman, 2004; Holbeche, 2001; Krell, 2001). Ashkenas et al. warned that “creeping changes, uncertainty, and anxiety that lasts for months are debilitating” (p. 165). Stone, Patton, and Heen (1999) proposed that, even if the news is bad, it is

important that managers be honest and straightforward and deliver the message with understanding and that if there are no immediate answers, they should make a note of it.

Several business authors also noted that early establishment of a reward system for those who demonstrate a personal commitment to achieving the intended outcomes contributes to improving the success of integration or a major change process (Kouzes & Posner, 1997; Murray & Richardson, 2003; Yukl, 2002). Leaders can actualize these benefits by implementing small strategies and celebrating each success. Collins (2001a, 2001b) and others referred to this as building a flywheel type of momentum in the initial phases of the initiative (Dunford, 1992; Kotter, 1996; Kouzes & Posner, 1997; Linden, 2003; Murray & Richardson, 2003; Yukl, 2002). Kotter (1996) suggested beginning with some business problems that were otherwise unresolved to establish early and noteworthy success to validate the benefits of the new structure and the general cohesiveness of the new unified team.

I have identified a number of opportunities that can accelerate the success of integration. Holbeche (2001) and Linden (2003) emphasized the importance of effectively addressing the human aspects of change in a merger and acquisition; thus, I have devoted the next subtopic specifically to reviewing the leadership practices in a strategic alliance, merger, or acquisition and, more generically, in leading a major change initiative.

Fourth Subtopic: Leadership in a Strategic Alliance, Merger, Acquisition, or Major Change Initiative

In this section of my literature review, I will discuss the essential leadership elements required for those assigned to a change initiative; they highlight the necessity of having (a) leaders assigned specifically to work on the change project, (b) highly skilled

transformational leaders who also possess rich organizational knowledge, (c) courageous leadership, (d) a high degree of interpersonal skills, and (e) the capacity to create a sense of urgency balanced with the confidence of success.

Leading integration in a strategic alliance, merger, or acquisition is a complex undertaking and should be resourced as a full-time commitment during the implementation and transitional period, with due diligence given to who will be assigned the champion role (Ashkenas et al., 2001; Edwards-Winslow, 2002). Existing business leaders in the parent companies may lack the authority, ability, or time to be the integration leader. General Electric has successfully applied a model that uses internal staff members with potential for structured integration efforts and the external experienced hand for the more complex acquisitions. The benefits of this approach are that those in the newly formed company are more inclined to ask necessary but basic questions, free of embarrassment, and these leaders may be better positioned to facilitate a new culture and build a bridge between the merged companies (Ashkenas et al., 2001).

Leaders of an alliance, merger, acquisition, or major collaborative initiative will need more skills than those leading a singular business, including deep knowledge of the companies, the capacity to diverge from tradition, and high relationship dexterity (Kanter, 2002; Linden, 2003). Bass (1990) referred to this as “superior leadership performance—transformational leadership, . . . when they generate awareness and acceptance of the purposes and mission of the group, and they stir their employees to look beyond their own self-interest” (p. 21). Yukl (2002) asserted that transformational leaders are able to build commitment to a new vision.

Nanda and Williamson (2002) noted that an integration effort requires a courageous leader who is “comfortable with exercising responsibility despite lacking complete authority” (p. 67). Managers of successful alliances embrace what authority they do have while selecting and building employee empowerment and loyalty to the joint venture. They do this through a team who can manage effectively with minimal organizational structure for a period of time (Bleeke & Ernst, 2002b; Nanda & Williamson, 2002). The successful change leader encourages the organization toward the intended results, provides the necessary tools for success, and empowers the middle managers and frontline staff to be innovative. The effective leader understands that major change initiatives involve things that go wrong; they allow time for positive results while coaching disciplined thought and supporting the team in finding collaborative solutions (Collins, 2001b; Dunford, 1992; Fullan, 2001; Kanter, 2002; Linden, 2003; McGehee, 2001; Murray & Richardson, 2003; Senge, 1999; Yukl, 2002). The leader who proposes an integration initiative for Fire and EMS on the premise needs to be particularly courageous. Letts, Ryan, and Grossman (1999) contended that, to acquire support for change “instead of worrying about exposing their organizational weaknesses, non-profits will have to sell those weaknesses by explaining that they know where to strengthen their organization” (p. 106). The leader of HES will have to possess the courage to make such revelations and have the confidence to be able to protect those resources regardless of the direction the integration initiative takes.

Numerous authors highlighted the importance of an integration champion having strong interpersonal skills (Ashkenas et al., 2001; Austin, 2000; Kanter, 2002; Nanda & Williamson, 2002). The successful leader will enable full organizational success by

facilitating a shared vision, limiting destructive resistance, coordinating the change implementation, and knowing when to be tough, empathetic, or humble without being wedded to perfection (Ashkenas & Francis, 2001; Austin, 2000; Goss, Pascale, & Athos, 1998; Holbeche, 2001; Kotter, 1996; Linden, 2003; Murray & Richardson, 2003; Senge, 1999; Yukl, 2002). Krell (2001) highlighted the need for “savvy leadership,” including remaining “visible for the first few months” (¶ 2), “communicating consistently and carefully” (¶ 3), developing the new vision and culture, and “distil[ling] what it means to the individual employee” (¶ 4). In his study of 188 companies, Goleman (1998) found that emotional intelligence is twice as important as technical skills and cognitive thinking for effective leadership.

The effective change leader needs the capacity to create a sense of urgency or use a crisis as the opportunity to initiate a successful major organizational change while remaining positive about the ability to succeed (Heskett; 1998; Kotter, 1996; Murray & Richardson, 2003; Yukl, 2002). Senge (1999) acknowledged the role of a crisis in a profound change initiative. However, he added another perspective: that the challenges are consequences of previous decisions and that, for sustained success, leaders need to pace the changes to match the cultural and organizational capacity for transformation. Dunford (1992) presented the cautionary perspective that leaders must maintain the pace sufficiently to stifle any adaptive process of returning to the old organizations or systems and suggested that the longer the change process takes, the more the original concept will be modified.

*Summary of Literature Review Key Topics 1, 2, & 3: Fire and EMS Integration
Alliance, Mergers, Acquisitions, and Leading Change*

Strategic leaders of municipal organizations, EMS included, should be continuously searching for opportunities to improve public services, and for this study I have considered the integration of services. My literature review included the specific exploration of Fire and EMS integration models and general business applications of strategic alliances, mergers, and acquisitions. Based on the current level of Fire and EMS integration, HES can consider (a) maximizing on the existing shared administration and support services, (b) adding more medical skills to the Fire tiered response program to provide one fire-medic on each fire apparatus (partial operational integration), or (c) merging the Fire and EMS operations with dual-trained fire-medics, including ambulance assignments (full operational integration).

Based on my general and specific literature reviews, the potential advantages of integration may include improved effectiveness and efficiencies. A potential disadvantage of an integrated model implied in the general review is inhibited independent decision making.

To consider fully the feasibility of integration, the potential obstacles to integration that I identified that were common to the general and specific reviews included (a) labour relation challenges, (b) cultural variances, (c) ineffective leadership practices, and (d) one business entity dominating the other. If an organization determines that the efforts necessary to overcome the obstacles are reasonable and that they are proceeding with the project, one of the key opportunities that will contribute to a successful outcome will be to apply effective leadership practices.

Essential to a successful integration project is assigning a specific individual to lead the change process; the candidate must have rich experience with the organizations involved and the attributes of a transformation leader, including a high level of interpersonal skills, courage, confidence, and the ability to motivate the team to achieve the shared vision.

Potential Solutions to the Problem/Opportunity

The organizational document review and the literature review discussions have highlighted the environment in which HES might consider further Fire and EMS integration. HES has integrated many of its administration and support services, although it may be possible to extend its breadth. Likewise, requiring that firefighters have additional medical skills could broaden the first response program. Minor changes may yield greater effectiveness and efficiencies to the EMS program, with fewer significant obstacles to diffuse. There are existing models of successful operational Fire and EMS integration in other areas, which suggests that it can be a viable option, although Ontario services have some unique challenges.

According to my findings from the organizational and literature review, further Fire and EMS integration, which may include operations, may be feasible for HES if it based on a shared vision of the key participants and the changes are executed in a manner consistent with best management practices. Integrating any organization has risks and benefits, and there are evidence-based leadership and change-management practices that should be applied to any Fire and EMS integration initiative.

In the next two chapters I will discuss the methods that I used to answer the study's main research question. I will consider the conclusions from my original research

with the information in Chapters One and Two to provide a summary discussion and recommendations.

CHAPTER THREE – RESEARCH METHODOLOGY

Research Paradigm and Overview of Methodology

This chapter describes the research paradigms, methodologies, data-collection tools, research ethics, and conduct of this project. It also describes my bias specific to this study, my decision rationale, and an outline of the research activities that I considered and executed.

Research Paradigms

This study primarily relies on the qualitative approach to identify the feasibility of further integration in the organisational structure and delivery of EMS by HES. The success of a change management process is in part or wholly contingent on the support of those whose jobs are directly affected, which makes it reasonable and responsible to measure and consider the perceptions of those affected. The project should measure the factors that can materially influence the success or failure of the proposed system modifications (Strebel, 1998; Yukl, 2002), independent of any potential theoretical success. The qualitative research design is well suited to evaluating various perceptions (Phillips, Palfrey, & Thomas, 1994).

A qualitative research approach is associated with the phenomenological research paradigm (Hussey & Hussey, 1997, p. 47). The phenomenologist uses “small samples . . . and different research methods . . . to obtain different perceptions, . . . looking for patterns . . . repeated in other situations” (p. 50). This research paradigm supports the premise that perceptions define reality and that it is more effective to ask people what they think than to try to infer (Palys, 1997). The focus of this study was on the level of integration that is

feasible. The literature review revealed that if there is theoretical merit to integrating two organizations, the remaining key obstacles are generally humanistic; therefore, measuring the perceptions of those experiences is important. The phenomenological approach acknowledges that different people may experience the same circumstances in different ways with a different reality (Polgar & Thomas, 1998). To address this need, the research project included various participants and required “getting close” (Palys, 1997, p. 27) to the inmates to understand their views.

Building on the qualitative design—in particular, in action research—the researcher closely interacts with the study participants (Morton-Cooper, 2000), which offers rich opportunities to gain an understanding of the potential for change and influence the perceptions of the change. While I conducted this project I continued in my role as a manager within the organization that sponsored, and I was also the principal researcher. My research function complemented my regular managerial duties, including a continuous scan for new methods of improving the effectiveness and efficiency of service delivery and the supporting structure. Hussey and Hussey (1997) believed that the “act of investigating reality . . . will have an effect on reality” (p. 52). My dual role as the lead investigator and my leadership role as a manager with the service being studied created participative opportunities for me to be part of an evolutionary process during the research. I designed this research project to be interactive with contemporaneous evaluation to facilitate positive and continuous change, congruent with the constructs of action-based research that I will detail in the next section (Hussey & Hussey, 1997).

Although the methodology for this study was predominantly qualitative, triangulation can strengthen the validity and the reliability of the research approach, and I

have therefore included quantitative data from a positivist paradigm (Hussey & Hussey, 1997; Palys, 1997). Palys suggested that there are “areas of significant overlap” (p. 12) in quantitative and qualitative research, and by including both approaches, I exploited their strengths and minimized the limitations of each (Hussey & Hussey, 1997; Palys, 1997). The objective of the study was to execute a disciplined review of Fire Service and EMS integration to allow the organisation to consider executing changes that may face resistance (Yukl, 2002). To limit the resistance and broaden the acceptance of the recommendations, I have used both qualitative and quantitative methods and data in an effort to interest a broad audience of change agents regardless of their preferred perspective (Hussey & Hussey, 1997).

Methodology

As noted, I conducted this project as action-based research. Stringer (1999) explained that “community-based action research provides a model for enacting local, action-orientated approaches to inquiry, applying small scale theorising to specific problems in specific situations” (p. 10). Hussey and Hussey (1997) and Glanz (1998) described action research as a “type of applied research designed to find an effective way of bringing about a conscious change in a partly controlled environment” (p. 65). The action-based methodology corresponds with the primary purpose of the project, which was to assist HES in understanding the perceived or real success and challenges of the current level of Fire Service and EMS integration and to consider further opportunities for service integration.

Community-based action research is also intended to be “a consensual approach to inquiry” that “seeks to link groups that potentially are in conflict so that they may obtain

viable, sustainable, and effective solutions to their common problems through dialogue and negotiation” (Stringer, 1999 p. 21). Whether the integration of the Fire Service and EMS remains in its current form or advances, the construction of the first HES model in 2001 was through a consensual decision-based process. It grew from dialogue and negotiation between the senior staff of two divisions, and it would appear from the review of the final document that they were given equal representation in the process. The collaborative premise of action research (Hussey & Hussey, 1997) remains consistent with the consultative management practices of the city and, specifically, the philosophy of interest-based transactions supported by the city’s labour relations division (Logan, 2002).

A number of Fire Service and EMS organisations that have engaged in an integrated model experienced interpersonal and interorganisational conflicts (City of Edmonton, Ambulance Steering Committee, 1992; Davis, 2003; Hunt, 1995; Matheson & Sims, 1997; McNamara, 1999; Weiss, 1998; Williams, 1995). To support these findings, during exploratory, interactive, annual educational sessions held in Hamilton with some HES staff in 2002, the Hamilton staff reported that after the amalgamation of Fire and EMS in 2001, they experienced and observed some interpersonal and interorganizational conflicts. Stringer (1999) asserted that action research is considered a less adversarial approach over traditional research methods and that one function of action research is to link groups that are potentially in conflict. In that regard the action research model for this evaluation is well suited as the process itself may assist with providing some relief. Further to that, the community-based approach is intended to enhance the lives of those who participate, regardless of the project findings, and therefore there is currency in

applying the community action-based process to advance organisational communication patterns.

Data-Gathering Tools

Stringer (1999) summarised the process of action research as looking, thinking, and acting and in the process including the study community. The looking phase of the research project formally began during my Royal Roads University (RRU) research courses and assignments, where, as students, we were required early to explore our preferred research topic with our student peers and faculty. Once I had identified and refined the general topic in consultation with my project sponsor, the thinking phase began; it included conducting the literature review and formulating and refining the project questions through consultation with key stakeholders and onsite faculty during my second-year residency in my Master of Arts in Leadership and Training degree program. At this stage and throughout the project I engaged the project sponsor, the research supervisor, and the study advisory group in a consultative process. The looking, thinking, and acting phases continued in parallel with the three “exploratory case studies,” complemented by “participative enquiry” (Zikmund, 1997, pp. 104-107) in the form of local focus groups in Hamilton. The case studies identified strengths and weaknesses encountered in other integrative models, and the interviews and focus groups helped me to analyze the case studies and determine how they could inform the further integration of Fire and EMS within HES.

Use of Case Studies

I used case studies to collect data and examine sites of Fire and EMS integration other than Hamilton to determine their respective organisational challenges and successes

(Phillips et al., 1994) and to gain an “understanding[ing of] the dynamics present within the single setting” (Hussey & Hussey, 1997, p. 65). I chose to review three case study sites (a) to enhance the data triangulation and provide opportunities to conduct “within case analysis and across case analysis” (Palys, 1997, p. 79), (b) to consider insightful samples of various levels of integration, and (c) to enhance the potential for generalising the study conclusions by capturing the key characteristics that may be considered by others (Hussey & Hussey, 1997).

One of the disadvantages of using case studies is the general difficulty in enlisting suitable organisations (Hussey & Hussey, 1997). One of the preferred case study sites was initially unwilling to participate because of past negative research experiences and other organisational priorities. I was able to overcome this reluctance by delaying the case studies, in agreement with the project sponsor and supervisor. The extended time allowed me the opportunity to work with the case study site to explain in detail the confidentiality agreement and reassure the organization that all I would review all recorded notes with the participants to ensure that they accurately represented the discussions.

I tentatively summarised the data derived from the case study interviews and coded them first in areas based on similar questions (Palys, 1997), while I identified evolving themes within each case study (Palys, 1997). I then shared the composite findings (with all identities protected) with the study advisory team, the project sponsor, and the project supervisor to look for and address any perceived researcher bias in the coding process. This was a continuation of the iterative process of refining the data through a cyclic review that I began during the case study interviews by reinterviewing where necessary to clarify information, gain greater depth of understanding and depth of

meaning, and further refine the code scheme (Palys, 1997; Zikmund, 1997). To triangulate the methods of the study beyond case studies, I also conducted focus groups with the Hamilton participants.

Focus Groups

To gather data from the Hamilton participants, I chose to employ focus groups to allow them to discuss and exchange their own observations and formulate powerful and sophisticated accounts of their perceptions of reality while interacting with representation from the various disciplines (Stringer, 1999; Zikmund, 1997).

At this stage of the study I used an inductive approach in the focus groups that Palys (1997) described as beginning the research with observing and then moving to theory. Putting this into practice, I facilitated focus group discussions and employed the same questions that I used for the case studies. The participants considered and discussed the findings of the literature review and my observations from the case study sites. They integrated these findings with their own “observations of empirical reality” (Hussey & Hussey, 1997, p. 13) in the current integration of HES. To nurture the reflective component of the Hamilton focus groups, the participants agreed to statements as their tentative consensus responses. I recorded the dialogue and displayed it on the computer for all to view (Stringer, 1999). By discussing each perspective, we highlighted and negotiated the differences, a process that Palys described as common to focus groups (p. 157). I gave each representative focus group the opportunity to reach its own final consensus, and where that was not possible, I recorded dissenting views (Stringer, 1999, p. 85). My participation and that of other Hamilton participants who have been directly involved in the current HES integration are an advantage from the perspective of a

qualitative researcher because we “may bring special insights, . . . having experienced a phenomenon from the inside” (Palys, 1997, p. 50).

As the researcher/facilitator, I was attempting through descriptive analysis to assist the group to (a) determine what components of integration worked, (b) identify single or multiple causal variables if they existed (Zikmund, 1997), and (c) explore and express their opinions and perceptions on an effective level of integration for Hamilton. Blumer (as cited in Palys, 1997) supported my rationale for using small groups of informed participants who are acute observers of the organization: that such “a discussion and resource group is more valuable many times over than any representative sample” (p. 157).

Another reason for using focus groups in Hamilton as a data-collection method was an attempt to take advantage of a unique opportunity for HES to practice as a learning organisation (Senge, 1994; Yukl, 2002). The research process ensured that the identity of the individual participants would not be disclosed, which, according to Mackeracher (1998) and Yukl, affords an unparalleled learning environment of trust, mutual respect, and objective input from the participants while they share experiences and concepts. Despite the assurances of confidentiality, some apparent cultural divisions in HES prompted one of the disciplines to ask to avoid having to meet with another; the other party did not request this limitation. Although this constrained some of the cross-disciplinary dialogue, it may have contributed to richer and more candid responses from the participants who felt less restrained. Some of the EMS participants stated that they were being more candid in their responses given that they had their own focus group. To

maintain the validity and reliability of the answers, I checked the various focus groups' answers for congruency with similar subject matter (Palys, 1997).

Some participants may feel constrained in their dialogue because of management-labour relationships or may inherently be more reserved in expressing their views, whereas others are more dominant and may inappropriately overinfluence the group (Palys, 1997; Zikmund, 1997). To offset the potential effects of both elements, I dedicated time at the beginning of each focus group to review the issues of confidentiality and the City of Hamilton's values as they apply to respecting each other's viewpoints (Rea & Parker, 1997; Stringer, 1999), and during the discussions, as the facilitator, I regularly tried to draw out responses from all of the participants. Using "participative enquiry" to conduct the sessions enhanced the learning environment and ensures that the voices of all participants are considered, including some who may otherwise be oppressed by cultural norms or organisational structures in other forms of research (Hussey & Hussey, 1997).

I encouraged the participants to "extend their knowledge base" (Stringer, 1999, p. 40) to create a more effective team, consistent with the principles of action-based research (Senge, 1994, 1999). Using focus groups as a means of collecting data for this project created a substantive opportunity to explore creative and innovative ideas with all participants (Rea & Parker, 1997).

Summary of Using Case Studies and Focus Groups

Utilizing case studies and focus groups for this project yielded potential benefits that extend beyond the study findings, which include but are not limited to enhancing

interorganisational and interpersonal communication, resolving conflict, fostering a learning organisation, and building interdivisional trust.

Participating Case Study Sites and Focus Groups

To create a list of case study sites for consideration, I conducted an Internet search on Fire and EMS integration and looked for articles on the subject matter, including circumstances where the initiative has been successful or abandoned. Constrained by my travel limitations and the applicability of the findings to the study setting, I limited the list to North America and purposefully selected the site by using “judgemental sampling” (Hussey & Hussey, 1997, p. 147; Zikmund, 1997, p. 428). The participating organisation was considered based on its experience of the phenomenon and the other predetermined and agreed-to demographics (Hussey & Hussey, 1997; Palys, 1997). The selection process included a review of multiple potential sites, followed by a discussion of the attributes of each with my project supervisor, my sponsor, and the project advisory group members before I made a final decision (Hussey & Hussey, 1997; Zikmund, 1997). To strengthen the triangulation of the project, I included at least one large, medium, and smaller service. Once I had determined the sites, a lead person at each site named the participants based on my explanation of target judgemental sampling. I set these criteria in consultation with the project advisory group, the project sponsor, and the project supervisor. Once I had selected the participants, I did not pursue other contacts (Hussey & Hussey, 1997). The three case study sites that I successfully recruited were Edmonton and Red Deer, Alberta, and Norfolk, Virginia.

The City of Edmonton, Alberta, represents a large municipal service that is currently integrated at an administrative level, and support services, Fire, and EMS

services are co-located in various stations. Edmonton previously attempted to implement a full service integration model but later withdrew from that level of integration (City of Edmonton, Ambulance Steering Committee, 1992; Hunt, 1995; Matheson & Sims, 1997; Williams, 1995). In 2004 the geographical area for which the emergency response system was responsible (excluding mutual aid) covered 700 kilometres and served 712,391 citizens. The combined Fire Service and EMS employees totalled 987 full-time-equivalent staff. The two divisions received 89,529 calls during the year (56,346 EMS and 30,183 Fire, of which 19,391 were tiered medical calls). The average emergency response time for fire-related calls was 2 minutes and 52 seconds (travel time as per NFPA 1710 [NFPA, 2005a, 2005b]) and for EMS, 7 minutes and 15 seconds. The total annual operating budget for both services in 2004 was \$92.8 million.

The City of Red Deer, Alberta, has a smaller municipal service, which is mandated to provide both services—Fire and EMS—to the city. In addition, the department has an EMS provision agreement to provide EMS to Red Deer County. The Red Deer model is fully integrated, including operations with dual-trained fire-medics on fire apparatus and ambulances and integrated support and administrative services. In 2004 the geographical area for which the emergency medical response system was responsible (excluding mutual aid) covered 1,200 square kilometres and served 89,082 citizens (including the county residents). It should be noted that fire suppression is responsible for only the City of Red Deer, a substantially smaller area of 40 square kilometres. In the combined emergency services, fire suppression and EMS employees totalled 102 full-time-equivalent staff. The two divisions received 5,988 calls during the year. The average emergency response time for fire-related calls was 7 minutes and 58 seconds and for

EMS, 5 minutes and 32 seconds from the time of the 911 call. The total annual operating budget for both services in 2004 was \$11,643,100.

The City of Norfolk, Virginia, was the third case study site. This site represents a mid-size municipal service that is a fully integrated EMS and Fire Service model and has been in existence for over a decade. In 2004 the geographical area for which the emergency response system was responsible (excluding mutual aid) covered 164.5 square kilometres and served 235,000 citizens. The Fire Service and EMS employees totalled 592 full-time-equivalent staff. The two divisions received 41,000 calls during the year. The average emergency response time for fire-related calls was 4 minutes and 30 seconds and for EMS, 6 minutes and 37 seconds. The total annual operating budget for both services in 2004 was \$28 million.

I also selected the Hamilton focus groups participants by applying purposive judgemental sampling (Hussey & Hussey, 1997; Palys, 1997), where I was seeking a representative from each target domain with some experience and/or knowledge of the phenomenon (Rea & Parker, 1997). This can also be characterised as “quota sampling” because I sought one representative from each discipline (Fire, EMS, labour relations, finance, labour, management) to facilitate cross-site and cross-discipline analysis (Zikmund, 1997). The representation in the focus group in each discipline paralleled that at the case study site, including key stakeholders, to ensure that the ideas that emerged would be meaningful to the individuals and organisations and that they would be “socially and culturally acceptable” (Stringer, 1999, p. 40). To a limited extent, “natural sampling” occurred, which is “fairly common to business research” (Hussey & Hussey, 1997, p. 147), where I relied on each site contact to provide me with participants based on

the criteria and who was available. The disadvantage of these forms of nonprobability sampling techniques is that it creates limits on the extent of “statistical analysis to project the data beyond the sample” (Zikmund, 1997, p. 440).

Interview Questions: Case Study Sites and Focus Groups

I asked the participants in the case study sites and the focus groups the same questions (Appendix A). I drafted them based on concepts that arose from the retrospective review of the literature on the general subject matter of Fire and EMS integration. Having created sample questions, I asked fellow graduate learners to critically appraise the questions during the 2002 residency, aided by the residency advisor. To further minimise the potential of biasing my questions (Stringer, 1999) and to strengthen the reliability and validity (Zikmund, 1997), I asked the project advisor, project sponsor, project advisory group (Rea & Parker, 1997), paramedics, firefighters, and HES management staff to review them. This process was part of the action research approach to create a consensus among the key stakeholders that could influence the success of this project while meeting the needs of the project sponsor (Stringer, 1999).

The responses to some questions might have been sensitive if the participants had been critical of their organization or their supervisors. Asking these questions in a face-to-face interview is more appropriate, and to assist the participants through the process, I intentionally structured the first questions that I asked to highlight positive experiences and perspectives, an approach that Hussey and Hussey (1997) suggested was appropriate to the circumstance.

I relied primarily on open-ended questions, which are considered superior if the researcher is seeking the participants’ opinions in their own words and which several

researchers recommended (Hussey & Hussey, 1997; Palys, 1997; Zikmund, 1997); this approach was consistent with the project research methodology. Palys explained that “open-ended questions can also operate as an ‘indirect’ measure to generate answers that are minimally affected by external influence that may other be created by suggestions emerging from the structure of the research instrument itself” (p. 165).

One key disadvantage of using open-ended questioning is evident in comparing different participants’ responses, which can be “interpretative, subjective, and time-consuming” (Rea & Parker, 1997, p. 35) to categorize and take more time for the participants. To minimise this issue, I designed eight of the nine questions; although I categorised them as open ended, they addressed specific topics, and, where applicable, I included “fixed categories” (Rea & Parker, 1997, p. 35). One of the nine questions was completely open ended (Palys, 1997). Stringer (1999) described this type of question as a “grand tour” (p. 69) question that allows participants the full opportunity to describe their perceptions in their own terms. To strengthen the quantitative component of this project, two of nine interview questions required closed-ended responses.

The questions that I asked all of the case study participants and the focus groups, the participative construction of the questions, and the question design were consistent with the qualitative paradigm while ensuring validity and reliability and affording some quantitative analysis.

Face-to-Face Interviews: Case Study Sites and Focus Groups

I used semistructured personal interviews (Appendix A) to gather data from management staff, paramedics, and firefighters in the case study sites and the Hamilton focus groups, which I intentionally designed as groups.

Although personal interviews are time consuming and relatively expensive, they are effective in obtaining answers to complex questions (Hussey & Hussey, 1997; Zikmund, 1997) and allow the researcher to get close to the participants to empathise and “truly understand” (Palys, 1997, p. 19). Consistent with the collaborative strategy, I conducted the interviews in settings agreeable to the participants. Because of scheduling and geographical constraints, I conducted one interview by telephone. This overall approach maintained an element of personal contact and two-way dialogue, an advantage that several authors identified (Palys, 1997; Polgar & Thomas, 1998; Rea & Parker, 1997).

Some participants may have concerns about their identity being more difficult to conceal in personal interviews. For this study I asked the participants to sign a confidentiality agreement, and explained I the issues in an interactive session. Where possible, I also gave them choices in where to meet. I attempted to conduct the interviews in a manner that would build trust and minimise their concerns that their identity could be attached to any specific response (Palys, 1997).

In discussing learning and communication styles of adults, Mackeracher (1998) recommended that the researcher distribute the interview questions to the participants in advance to accommodate the various learning styles and reduce potential communication barriers that might prevent the researcher from receiving reliable responses. The face-to-face interaction allows the participants to clarify any confusion about the questions (Palys, 1997; Phillips et al., 1994; Zikmund, 1997). Although this technique may compromise the spontaneity of the responses, it provides opportunities for the broader

community to become involved in the research process, consistent with the working principles of action research (Stringer, 1999).

The interview process, more than other methods of collecting data, “symbolically recognizes the legitimacy of their [the participants’] views” (Stringer, 1999, p. 68), which is consistent with the action research paradigm and affords the participants a clear opportunity to visually ensure that the researcher is listening to their contributions.

Data Analysis

I collected and analysed the data with the intention of accurately identifying trends across sites and disciplines—Fire and EMS, finance, labour relations, and so on. Using the questions as a means of categorising the data, I first tabulated the raw data from the case study interviews, including exceptional responses, and considered preliminary themes that appeared to be emerging. The project advisory team then reviewed this work and provided a critical appraisal, and, where appropriate, I made modifications based on their advice. I open-coded the responses of the individual study participants from the three case studies (Hussey & Hussey, 1997) with classifications that evolved from the described participatory process. I then shared with the focus group the early study findings, the coding, and the groupings that arose from this process to facilitate and centre the discussions on the issues being studied (Palys, 1997; Rea & Parker, 1997).

I also applied the coding that I used with the case studies to the focus group findings; the open-ended questions required more intensive interpretative consideration than the two closed-ended questions did (Zikmund, 1997). I further restructured and rebuilt the individual data elements from the case-study and focus-group data “with the

intention of revealing links and relationships” (Hussey & Hussey, 1997, p. 267), a process consistent with “axial coding” (p. 267).

To enhance the meaning of the project quantitatively, I included frequency distribution tabulation (Zikmund, 1997) by applying “nomothetic analysis” (Palys, 1997, p. 15) to “describe a general phenomenon” (Polgar & Thomas, 1998, p. 110). In this process exceptions to the rule cancel each other, and the remaining group average is considered indicative of normal behaviour in a given situation (Palys, 1997, p. 15). To strengthen the credibility of the data and to limit the potential researcher bias that might otherwise have affected the data interpretation and coded themes, I counted the frequency to assess the “representativeness” of the phenomena (Palys, 1997, p. 301; Phillips et al., 1994, p. 48). As previously noted, the project advisory team assisted in the process of analysing and interpreting the findings from the cases studies (Phillips et al., 1994). I applied the results of the axial coding to inform a “repertory grid” (Hussey & Hussey, 1997, p. 254) to illustrate the frequency distribution to allow me to assess the representativeness of the key phenomena identified by the research participants (Palys, 1997). I then analysed the results within the individual case study sites, across the three combined case study sites, within the Hamilton focus groups, and across all of the disciplines represented.

Trustworthiness

Reliability and Validity

Reliability and validity are important to any form of research. Palys (1997) explained that “reliability implies that repeated observations of the same phenomenon should yield the same results” (p. 4); this is consistent with Hussey and Hussey’s (1997)

definition. Phillips et al. (1994) described reliability as the “extent to which repeated measurements (e.g., structured tests and interviews) made on the same material (respondents) would achieve the same result” (p. 50). Palys also stated that “validity means we are measuring what we want to measure” (p. 4), with which Abramson (as cited in Phillips et al., 1994) and Hussey and Hussey concurred. Stringer (1999) contended that action-based research is naturalistic inquiry and hence “reliability, validity and generalizability are inappropriate” (p. 176). However, there is an expectation that researchers will ensure the credibility, dependability, confirmability, and transferability of their research findings. In the balance of this section I will review these considerations and others as they applied to this project.

Credibility

Stringer (1999) suggested that credibility is established in action research by allowing the “triangulation of information of multiple data sources, participants to check and verify the information recorded, . . . [and] peer debriefing processes to reflect on research procedures” (p. 176) with others. Easterby-Smith, Thorpe, and Lowe (as cited in Hussey & Hussey, 1997) maintained that reliability and/or validity can be achieved by triangulation; in this study, I have specifically applied this in my methods, my analysis of the data, and the theories that I formulated, some aspects that I have already discussed. Phillips et al. (1994) further supported the use of triangulation for this purpose.

In this study I triangulated the methodologies by using a qualitative research paradigm complemented by a quantitative perspective (Hussey & Hussey, 1997; Palys, 1997). I used multiple schemas for collecting the data for this project, and I constructed the data triangulation in a number of ways. The first step was to review the applicable

literature, augmented by case studies of sites that have attempted Fire and EMS integration. I conducted individual interviews and then focus group sessions with the participants from the local study area. I enhanced the data triangulation applied to the case study sites by considering multiple services of differing sizes, geographic locations, and levels of success. In the case study sites and the focus groups, I asked questions that would reveal what worked and what did not work (Phillips et al., 1994). By applying analytic induction to the findings, I sought to add to the reliability of the results (Palys, 1997). To apply theoretical triangulation, I included participants from various disciplines within each site (Hussey & Hussey, 1997). I also considered other business areas than the direct Fire Service and EMS to inform the project (Zikmund, 1997).

Verifying the Information

Stringer (1999) concluded that checking and verifying the information enhances the credibility of the data gathered. During the case study interviews, I recorded the participants' comments in point form and then validated with the participants that they accurately reflected their responses. I retained the answers in point form as a complete data set. In addition to the interview questions and responses, I used a standardized organisational profile for each case study site.

During the Hamilton focus group sessions, I recorded the relevant narratives on a computer and projected them on a whiteboard. All of the participants validated the records as accurate reflections of their contributions; these included dissenting views where there was no consensus.

To strengthen the reliability of the questions and the credibility and thoughtfulness of the answers, I formulated basic questions around themes and then reworded them to

address the key concept twice (Rea & Parker, 1997). One would expect that the participants would give similar answers to similar questions unless they misinterpreted the question or there were deviant cases (Phillips et al., 1994). The interview process afforded me the opportunity to ask probing and reflective questions to enhance the validity of the responses by testing the authenticity or understanding of the question (Phillips et al., 1994). There were no circumstances in which I believed that the answers were anything less than authentic and thoughtful, and I felt that there was a reasonable level of congruency in the responses of each individual participant.

Some study participants provided information that some stakeholders might not consider popular, which made it important to emphasise the level of confidentiality that I afforded the participants. Without such reassurances, it is reasonable to consider that some participants might have restricted or altered their responses (Palys, 1997). To minimise the potential for “reactivity,” in which the participants’ responses are altered by the presence of the researcher, the researcher should seek participants with similar characteristics. To minimise reactivity, I began the interviews and focus groups by finding a shared interest to enable the participants to identify with me, whether it was to highlight that I am a paramedic, an emergency service staff member, part of the management team, or a municipal employee (Palys, 1997).

One strategy to further strengthen the reliability and validity of qualitative research is to prolong the engagement of the project, which should minimise the distortion that the presence of the researcher might otherwise cause (Polgar & Thomas, 1998). In this project, approximately a year after the first interview, I reinterviewed one representative from each of the domains in the local focus groups and used the same

questions. I compared the current and past answers and looked for congruency in the responses within each domain. The general principles supported within each domain remained relatively constant.

I provided none of the case study or focus group participants with financial inducements to participate; however, Rea and Parker (1997) suggested that meals for focus groups are considered acceptable, and I provided meals and/or refreshments during the two- to three-hour sessions.

Stringer (1999) asserted that “dependability and confirmability are provided through an audit trail that clearly describes process of collecting and analysing the data and means that readers can refer to raw data” (p. 177). Phillips et al. (1994) supported this process; however, they also proposed that it adds to the reliability of the data, allows others to “replicate the study to compare results” (p. 50), and contributes to the validity (p. 49) because the participants can confirm their responses. To enhance the dependability and confirmability of the data, throughout this report I have provided a detailed explanation of the collection and analysis of the data. I have reported the interview questions (Appendix A) and described the process that I used that would allow others to replicate the study. I have described the opportunities that I gave the study participants to confirm that my recorded responses accurately reflected their interview answers. I also asked the focus group participants to review and comment on the data from the literature review and the case study findings. Chapter Four of this report includes an open account of the study findings. I will keep the detailed interview notes that support the findings locked up and secured for two years, and they are available if required. These collective interventions ensure the dependability and confirmability of the study data.

“Transferability is established by describing the means for applying the research findings to other contexts,” which is achieved by providing “detailed descriptions that enable audiences . . . see themselves and/or their situation in the accounts presented” (Stringer, 1999, pp. 176-177). I have achieved transferability in this research project by highlighting the demographics of the case studies and, in detail, HES’s current and continuing circumstances. In addition, I have described the findings from each case study site and the Hamilton focus groups in detail, including exceptional responses, to allow the reader to gain a full breadth of understanding. However, the limitation of community-based action research projects—and this project is no exception—is that the results, and particularly the recommendations for Hamilton, are closely affiliated with the specific site. The results and recommendations are rich with contributions from the local culture and evolving experiences, including those arising from being engaged in the research project itself (Stringer, 1999).

Researcher Bias

To minimise the potential for my bias to prevail unchecked, I ensured that at regular intervals I informed the participants and the advisory team of my underlying beliefs. I support and encourage integrating public service divisions if there is sound reason and/or evidence to suggest that a new model will provide more effective and/or efficient services to the public. Without identifying a specific level of Fire and EMS integration for Hamilton that I thought might be appropriate for Hamilton, I informed the participants that I believed that the community might be better served by extending the integration if that was the general will of key stakeholders. For the reader’s information, I am a White middle-class male, I have practiced as a field paramedic for 26 years, and I

have been in an EMS management role for 20 years. I have never worked as a firefighter; nor do I have any direct control over the City's Fire division. On occasion, I act as the general manager for Emergency Services, responsible for Fire and EMS.

Study Ethics

To maintain humanistic ethical research throughout the major project, I used a combined style of value-based and contingency leadership as a guiding model for my conduct (O'Toole, 1995; Yukl, 2002). I followed each of the following humanistic ethical principles of the RRU (2004) Research Ethics Policy: (a) respect for human dignity, (b) respect for free and informed consent, (c) respect for vulnerable persons, (d) respect for justice and inclusiveness, (e) balancing harms and benefits, (f) minimizing harm, (g) maximizing benefits, and (h) scientific obligations.

Hussey and Hussey (1997) cautioned that it is unethical "to embarrass or ridicule participants" (p. 38). By giving the study participants the opportunity to review the study prospectus in advance, I allowed them to withdraw from the study before it started if they felt that it would embarrass them. I then gave them the opportunity for "free and informed consent" (Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council of Canada, 2005, p. 31). With the approval of the sponsoring agent, I notified the HES staff representatives that I would be conducting the project. The study participants provided me with written consent, and I reassured them that they were free to choose to participate or not, without fear of repercussion (Palys, 1997). I also reassured the research participants that I would maintain their right to privacy and confidentiality.

I distributed the study proposal electronically to the project advisory team, and in a group session they established the project's values to minimize the potential for participants to be ignored or influenced by powerful individual interests or groups. To minimize the potential of harm to the individuals involved, I contained the number of participants, which I balanced by ensuring that I had sufficient input to provide trustworthy results. The intended primary beneficiary of the knowledge gained from this study is the public, as well as the firefighters and paramedics who may benefit from expanded job opportunities. Palys (1997) advised that researchers attempt "to leave a situation better" (p. 116) than they found it.

To fulfil my researcher's obligation to conduct the study in a manner of the highest quality by using accepted methods and research designs, I followed the designs that had been approved in my major study prospectus and by my project supervisor. Throughout the project I balanced my research ethics with my scientific obligation to provide a valuable product for the sponsoring organisation, the subjects of the study (namely, the paramedics and the firefighters), their supporting agencies, and myself as the researcher/learner (Zikmund, 1997, p. 64).

Summary

The predominant approach to this study was qualitative, with some elements of quantitative to speak to a broader readership audience and add depth to the findings. The project was community-based action research, and as the lead investigator I was involved throughout the process in the case study sites and with the Hamilton focus groups. I took a number of opportunities to triangulate the data to strengthen the validity and reliability of the results. I conducted a series of interviews in three case study sites and used similar

questions with multiple Hamilton focus groups. I coded and analyzed the findings of the cases study sites and the focus groups and conducted the entire research project in a manner that ensured that I met the RRU (2004) ethics requirements and that was consistent with the purpose of action research: to ensure that the findings, conclusions, and recommendation have practical application.

CHAPTER FOUR – RESEARCH STUDY RESULTS

Study Findings, Conclusions, and Recommendations for Further Fire and EMS Integration in Hamilton

Introduction

This chapter includes a detailed description of the study findings, conclusions, and recommendations from my attempt to answer the primary research question, *What level of Fire and Emergency Medical Services integration is feasible in the City of Hamilton, Ontario?* The answer was based on the responses to the secondary questions regarding the potential (a) advantages, (b) disadvantages, (c) obstacles, (d) opportunities for integration, and (e) recommended levels of integration for HES. I will discuss each of the secondary questions as a category and then the thematic subcategories that emerged. I will address the subcategories in rank order, based on the total number of case-study participants and Hamilton focus-group participants who provided similar information. Each subcategory features a review of the findings and a conclusion. Where applicable, I will discuss additional subcategories that materialized from other study data.

The chapter begins with the categories of advantages and disadvantages, followed by a discussion on the potential budget impacts. I will then review the levels of integration recommended by participants at the case study sites and the Hamilton focus groups. The cumulative consideration of these findings facilitates a provisional decision on the merits of further integration, and I segue to a discussion of the potential obstacles and opportunities should an integration initiative be further pursued. The chapter ends

with a summary discussion and four major recommendations. The summarized results appear in Table 2, informed by detailed responses extracted from the research log.

Table 2

Summary Findings of the Case Study Participants' or Focus Groups' Identified

Advantages of Fire and EMS Integration

Case study participants or focus groups citing a particular subcategory	Total of A + B	A. Case study site participants	B. Hamilton focus groups
Improved efficiencies/cost saving or avoidance	16 of 20	12 of 16	4 of 4
Improved effectiveness	15 of 20	12 of 16	3 of 4
Staff benefits	8 of 20	6 of 16	2 of 4

Advantages of Fire and EMS Integration: Findings

The first category (Table 2) is the advantages of Fire and EMS integration, including the subcategories (a) improved efficiency (b) improved effectiveness, and (c) staff benefits.

Efficiency

Findings from the case study sites and Hamilton focus groups: Service efficiencies was the most predominantly cited advantage, and examples could be found across all case study sites and Hamilton focus groups, which collectively represented each of the levels of integration being evaluated in this study. At least one representative from each of the disciplines, including finance, administration, labour relations, and labour representatives, saw improved efficiencies as being associated with service integration.

The key efficiencies that the participants at the case study sites identified are as follow: (a) shared buildings (b) the need for fewer supervisory resources, (c) labour relations efficiency in a single union environment, (d) savings in joint capital purchases, (e) maximal use of Fire capacity, and (f) better workload distribution. Six of the seven Edmonton case study participants provided examples of increased efficiency. One participant cautioned that the efficiencies derived from the economy of scale could eventually be marginalized given the increasing complexity and bureaucracy of operating a large organization. Tindal and Tindal (2000) addressed this phenomenon: “If municipalities are made too large, diseconomies of scale arise—because of problems delivering services to remote areas within an enlarged jurisdiction and because of bureaucratic congestion” (p. 175).

The efficiencies that the Hamilton focus groups identified were (a) shared facilities, (b) shared administration, (c) standardization of goods and services, (d) fewer supervisory/management resources required, and (e) labour relations efficiency with one union.

Conclusion from the case study sites and Hamilton focus groups: The data from both the case study participants and the focus groups identify improved efficiency as an advantage of integration. Many examples of efficiency that the case study participants noted have materialized in Hamilton, as reported by the Hamilton focus groups. The case study sites with operational integration offered some additional examples of efficiencies, and it is possible that some of these could be achieved by extending Hamilton’s current level of integration.

Effectiveness

Case study sites and Hamilton focus groups: The second most predominant advantage that the case study participants and the Hamilton focus groups identified was improved effectiveness (Table 2). The examples of improved effectiveness spanned all three case study sites. In those with operational integration, eight of nine participants gave examples of enhanced effectiveness; and in sites with administrative and support integration, four of seven of participants expressed the same viewpoint. Examples of improved effectiveness included (a) flexible workforce, which permits rapid redeployment to address surge demands in one or the other service (Fire or EMS), (b) improved team work with more shared awareness and less duplication, (c) the ability of the first unit on scene to conduct either the fire or EMS assessment, (d) more medically trained staff at multiple-patient scenes, (e) a higher level of medical care throughout the continuum of care from the first response to the hospital transfer of care, and (f) more effective communication links in an Emergency Operating Center as a result of having one representative for EMS and Fire.

In addition to the above comments, one case study participant noted that the integrated service model created the capacity for a strategic service division that specializes in research and planning and that this would not have been otherwise possible. Numerous authors on related topics supported the observation that a merged company may be able to improve its services or products in a manner that is not otherwise possible as separate organizations (Chesbrough & Teece, 2002; Hamel et al., 2002; Kanter, 2002).

Examples of improved effectiveness that the Hamilton focus groups identified were (a) improved communication between disciplines, which results in more effective

service delivery (achieved by being housed in the same stations and creating informal opportunities to dialogue and better understand each other's work); (b) an improved community profile for Fire and EMS because a larger merged organization enhances the community and interorganisational awareness, potentially yielding better use of the two services. Kanter (2002) supported this latter finding based on the results of her study.

Conclusion from the case study sites and Hamilton focus groups: The case study participants offered numerous examples of improved effectiveness in their services or products that would not be possible as two separate entities. The focus groups identified the improved community awareness of a merged organization. There is evidence that effectiveness has the potential to improve even at the most basic level of integration and that further integration might realize further effectiveness.

Staff Benefits

Case study sites and Hamilton focus groups: The third most predominant advantage that the case study participants and the Hamilton focus groups identified was improved staff benefits (Table 2). The case study participants with integration at an operational level attributed staff benefits to the structural model: (a) improved salaries, (b) better benefits for paramedics, (c) more career diversity, which enhances continued job interest and longevity, (d) improved workload distribution, which results in greater job satisfaction, and (f) simplified pay structures, which reduce inequities. The labour representatives from the case study sites who were involved in operational integration saw the integration as positive because it fostered equitable work distribution, which contributes to staff self-worth. A number of authors supported this latter finding that staff are more satisfied if they believe that their contributions are important and meaningful to

the organization (Dunford, 1992; Kouzes & Posner, 1997; Nankervis, Compton, & McCarthy, 1996; Yukl, 2002). At the case study sites, even the senior staff responsible for attaining funds to pay for staff benefits still asserted that integration was efficient. Labour representatives cited examples of benefits to staff related to integration that verified that the organization's intention was being carried out.

Examples of staff benefits that two of the four Hamilton focus groups identified included more management opportunities and a more professional workplace environment.

Conclusion from the case study sites and Hamilton focus groups: The collective findings suggest that various levels of integration have the potential to yield benefits to the staff, which those involved in operational integration noted more readily.

Summary of Advantages of Integration

Based on the findings and conclusions from all of the case study sites and the focus groups, there seem to be potential advantages that Hamilton could realize if it were to proceed with further integration. To balance this consideration, the next category addresses the disadvantages of integration.

Disadvantages of Fire and EMS Integration: Findings

Findings from the case study sites and Hamilton focus groups: In categorizing the findings for this study, I defined *disadvantage* as an issue or event that will have a negative impact on an integration effort, regardless of reasonable interventions to mitigate those effects. I also defined *obstacle* as an issue or event that has the potential to limit successful integration initiatives, unless reasonable interventions can counteract any negative impacts.

This section discusses the noted disadvantages of Fire and EMS integration, including the subcategories of (a) operational issues, (b) training demands, (c) recruitment/retention challenges, and; (d) integration as an organizational model (Table 3).

Table 3

Summary Findings of the Case Study Participants' or Focus Groups' Identified

Disadvantages (Weaknesses) of Fire and EMS Integration

Case study participants or focus groups citing a particular subcategory	Total of A + B	A. Case study site participants	B. Hamilton focus groups
Operational issues	7 of 20	5 of 16	2 of 4
Training demands	4 of 20	4 of 16	0 of 4
Recruitment/retention	4 of 20	3 of 16	1 of 4
Ineffective	1 of 20	1 of 16	0 of 4

Operational Issues

Findings from the case study sites and Hamilton focus groups: The case study participants and the Hamilton focus groups identified operational issues as the most predominant disadvantage of integration. The operational issues specified spanned the three case study sites. One participant from an operationally integrated service noted that “there may not be enough resources during major events as staff levels were cut based on duplication of effort” and that “EMS demands increase more rapidly than fire and quickly deplete fire protection capacity.” Another operational issue that two case study participants identified was that “EMS does roving deployment and Fire does station

based, and the two models do not match.” These participants claimed that any attempt to blend the two services would require compromising one of the deployment models. Some case study participants involved in operational integration reported that there was an ongoing issue with workload distribution, which was creating internal struggles related to which staff work the busier ambulance assignments.

Two of four Hamilton focus groups identified operational disadvantages. One participant explained that “lots of EMS calls are not emergency responses but health issues,” and therefore integration with Fire may not be the preferred option. A participant from the other group noted that ambulance dispatching in Hamilton is a separate operation governed by the provincial government and that the operational integration that does not include dispatch integration would create confusion. One participant suggested that there would be conflicts within HES over which service, Fire or EMS, has priority when there are concurrent Fire and EMS calls and calls across organizations given that the provincial dispatch resource would be deploying fire-medics to EMS and indirectly affecting fire resources. The participants summarized by suggesting that if the street service were integrated, the dispatch services of Fire and EMS would need to be municipally governed.

Conclusion from case studies and Hamilton focus groups: The most common operational disadvantage amongst the case study participants was that the integrated model might encourage staff reductions, which could compromise the capacity to cover concurrent Fire and EMS surge demands. The more probable scenario is that one service at a time experiences a demand surge. A system with Fire and EMS in separate silos is less flexible in dealing with a surge in a single organization or both organizations

concurrently. At least in the model with some dual-trained staff, they can be moved immediately to the service in need. Participants from only one site claimed that the two types of deployment models present an operational disadvantage, and that site was not operationally integrated. Those from another site saw workload distribution as a disadvantage; however, this finding was balanced with comments from three other case study participants involved in operational integration who considered workload distribution an integration advantage. Although the participants in only one focus group discussed the need for Fire and EMS to be dispatched by one organization, its importance as a finding should not be minimized. This phenomenon would not occur where ambulance dispatch is a separate level of government. The ambulance dispatch operated by a separate level of government is a disadvantage of operational integration. Depending on the local circumstance, if the dispatch service were under one level of governance, the priority of Fire or EMS may be an obstacle to integration. However, in the circumstance in which the focus group was situated, it is a disadvantage in that the two levels of governance are not easily resolved.

Although operational challenges exist, all of the case study participants who identified operational disadvantages also gave examples of increased effectiveness and efficiency with their respective models.

Training Demands

Findings from the case study sites and Hamilton focus groups: The participants from the two case study sites reported additional training demands from having dual-trained fire-medics, which is a disadvantage of integration. Even though a number of competencies are common to the paramedic and firefighter disciplines (e.g., scene safety,

report documentation, emergency driving), the dual-trained fire-medical at the outset needs to learn the shared competencies as well as all competencies unique to paramedics (e.g., intubation) and to firefighters (e.g., primary fire rescue). The participants from the affected case study sites reported that more continuing education is also required to maintain knowledge in both Fire and EMS. All of the responses referred only to dual-trained firefighters at the ACP level. The participants claimed that a contributing factor to the need for more training is that a large number of ACPs share the same number of patients, which dilutes the street-service practice. The case study respondents warned that unless fire-fighting suppression training has equal standing with continuing medical education, then firefighting skills may suffer. In addition to the frontline staff's need for technical skills, the case study participants also cited concern over the lack of leaders who have training in Fire and EMS. All of the case study site participants who cited this issue were from the sites with operational integration.

Conclusions from the case study sites and Hamilton focus groups: The findings from the case study sites suggest that pursuing operational integration would create additional training demands, which would particularly affect emergency rescuers with specialized functions (e.g., ACP, high-level rescue, and hazardous materials). If, by organizational design, the number of staff who perform the same competencies increases while the field opportunities remain constant, then practice diminishes and training needs may increase for each staff member. However, in this circumstance, if the issue is substantiated, it is applicable whether there is a high ratio of ACPs in a Fire-EMS model or in a stand-alone EMS system. It is noteworthy that the same case study participants who identified enhanced training needs also claimed that operational integration led to

improved service effectiveness. Although participants from the case study sites with operational integration raised the issue of leaders not having training in both disciplines, they qualified that a strong, unbiased leader could minimize any negative impacts.

Recruitment and Retention

Findings from the case study site and Hamilton focus group. The fifth most predominant disadvantage of integration involved issues related to staff recruitment and/or retention, but only those involved in operational integration identified it. The participants from two case study sites reported that it was more difficult to find staff with competence in both disciplines, which thereby limits the size of the labour pool. This was problematic for one site that was experiencing a shortage of paramedics across a large geographical area, and seeking dual-trained staff was making recruitment particularly difficult. The participants from one site noted that the dual-trained staff members enjoy more job prospects, which was exacerbating the employer's challenges related to staff retention.

Conclusion from the case study sites and Hamilton focus group: According to the study findings, in particular circumstances, recruitment and retention issues present a potential disadvantage for services that consider operational integration when the labour market pool for firefighters or paramedics is limited. One of the original reasons for conducting this study was to determine whether dual-trained staff could assist with the expected mass departure of HES firefighters within the decade. If an organization does not have a large contingent of dual-trained staff and the organization attempts to recruit fire-medics during the exodus recruitment, this may create more problems than it solves.

Integration

Finding and conclusion from the case study sites and Hamilton focus group: One of the case study participants not involved in operational integration asserted that integrating Fire and EMS is ineffective. As an example, the participant claimed that the merged dispatch service was more expensive to operate than separate Fire and EMS centres. The senior management team at the same site who reported that the net cost to operate the two merged services was cheaper balanced this singular finding.

Summary of Disadvantages of Integration

The discussion of the potential disadvantages of Fire and EMS integration has illustrated that across the case study sites and the focus groups there are some issues that need to be addressed. The leaders should weigh the disadvantages in context with the potential advantages. The next category is a review of the perceived financial implications of integration.

Financial Implications of Integration

Findings from the case study and Hamilton focus groups: As a separate inquiry, I asked the case study groups and the Hamilton focus groups to discuss from their general knowledge the financial implications of integration, and I noted that the data I gathered from their responses did not replace a financial audit. Of the case study participants who provided a definitive opinion on the subject matter, eight believed that integration has resulted in net financial savings for their organization, and all of the Hamilton focus groups offered the same response (Table 4).

Table 4

Summary Findings of the Case Study Participants' or Focus Groups' Perceptions of the Budget Impact of Integrating Fire and EMS

Case study participants and focus groups perception of budget impact of integration	Total of A + B	A. Case study participants	B. Hamilton focus groups
Positive	12 of 20	8 of 16	4 of 4
Unknown	7 of 20	7 of 16	0 of 4
Negative	1 of 20	1 of 16	0 of 4
Neutral	0 of 20	0 of 16	0 of 4

All of the case study participants who said that they could not reasonably assess the financial impact of integration were involved in operational integration; this included the responses from financial representatives. Many claimed that they could not provide even an opinion, much less an example, given the difficulty of finding a jurisdiction similar in size, demands, and regulatory requirements to use as a benchmark. Other participants suggested that given the time they have been integrated, most of their Fire and EMS cost centers have now also merged, which makes it difficult to isolate the expenditures of each individual service to establish even an estimate. However, six of seven involved in support services and administration integration asserted that their model was able to contain the overall operating costs. The financial division of one site was conducting a financial analysis of its model and estimated savings of 3% to 5% of the net cost of the two services. One participant suggested that reducing Fire resources was the primary method used to achieve the savings.

All of the Hamilton focus groups believed that their existing level of integration had resulted in financial savings. For example, cost savings had resulted from (a) bulk purchases of defibrillators, medical supplies, and uniforms; (b) support staff flexibility; (c) consolidated emergency service vehicle maintenance; and (d) shared stations. In contrast, others commented that there has been no strong communication of the long-term vision of integration, which had contributed to labour unrest, particularly with the paramedics, and resulted in substantial labour relations legal costs. The financial focus group cautioned that the savings achieved based on economy of scale could evaporate with the increasing operating cost of managing a complex merged organization. One focus group believed that the maximal financial benefit exists at the current integration level; however, “the effectiveness benefits that are achievable with partial operational integration are worth any loss in financial savings achieved with administrative and support integration.” This comment is consistent with the principles of the performance of nonprofit organizations. Anthony and Young (2003) asserted that the effectiveness cannot solely be considered based on financial data but that other reliable measures of accomplishments must also be taken into account.

Conclusion from the case study sites and Hamilton focus group. Based on this study’s findings, it seems that there is the potential to reduce costs while delivering the same community service by integrating Fire and EMS at an administrative and support function level. As an organization extends into an expanded tiered-response role with firefighters and operational integration, determining the incremental financial benefits becomes increasingly challenging. It seems reasonable that if at least some frontline staff

have broader skill sets, this creates more flexibility within the workforce and the opportunity to contain expenditures provided that any costs arising are neutral or nominal.

Summary of Advantages, Disadvantages, and Financial Implications

Generally, the case study participants and the focus groups collectively identified more potential advantages than disadvantages of integration. They provided a number of examples of opportunities for cost containment and some instances of expenditure savings. However, there is some evidence to suggest that the scale of the financial advantage may diminish as the integration increases in complexity and size. The next section discusses the study participants' recommended levels of integration.

Recommended Levels of Integration

Findings from the case study sites and Hamilton focus groups: This section reports the level of fire and EMS integration that the case study participants and the Hamilton focus groups recommended for their service and others. All case study site participants and the Hamilton focus groups predominantly favoured partial or full operational integration (Table 5).

When I asked the case study participants what level of integration they would recommend for other services, the majority believed that it should be a site-specific decision. All of the case study participants who worked in a full operational integrated service stated that their current system best served their needs. For the case study sites that were not operationally integrated, three of seven participants favoured full operational integration.

Table 5

Summary Findings of the Case Study Participants' and Focus Groups' Recommendations for the Level of Fire and EMS Integration for Their Service and Others

Level of integration recommended	Total of A + B	A. Case study participants	B. Hamilton focus groups
For their services			
Fully operational	11 of 20	10 of 16	1 of 4
Partial operational	4 of 20	2 of 16	2 of 4
Administration and support	4 of 20	3 of 16	1 of 4
No integration	1 of 20	1 of 16	0 of 4
For others			
Specific to the site	14 of 20	11 of 16	3 of 4
Fully operational	5 of 20	4 of 16	1 of 4
No integration	1 of 20	1 of 16	0 of 4
Administration and support	0 of 20	0 of 16	0 of 4
Partial operational	0 of 20	0 of 16	0 of 4

Three of four Hamilton focus groups recommended that for other municipalities the community's own circumstances should determine the level of integration. As it applied to the Hamilton service, three of four focus groups recommended some level of operational integration, and the remaining focus group recommended the current level of integration. One group cautioned that whatever the model of integration, it must be "fully supported and desired by all the relevant stakeholders" to be successful.

The focus group that suggested that HES continue with the current level of integration recommended that for continued success the HES management team should (a) ensure an equal number of Fire and EMS management, (b) explore opportunities to

integrate specialized functions (e.g., high-angle rescue), and (c) continue to provide separate Fire and EMS quarters. Their rationale for maintaining the current level of integration was that (a) the training required to achieve a large pool of dual qualified staff would be cost prohibitive, (b) the outstanding EMS labour issues would be more difficult to resolve, (c) staff compensation for a dual-trained staff would be cost prohibitive; (d) the Fire and EMS cultural gap is improving, but not fully resolved, (e) the current EMS work force is not supportive, and (f) the current Ambulance Act impedes operational integration.

The focus groups that supported operational integration believed that it could provide career flexibility while containing the costs of new resources that would otherwise be required to meet growing emergency medical demands. The one focus group that supported full operational service integration asserted that one harmonized union could provide more effective service.

Conclusions from the case study sites and Hamilton focus groups: Based on the study findings, the level of integration for Hamilton should be determined by local circumstances. The majority of focus groups and case study participants expressed general support for some level of operational integration, which might include an expanded medical role in tiered response with one fire-medic on each fire apparatus (partial operational) or a core group of dual-trained fire-medics (full operational). One focus group was very reluctant to proceed with operational integration but supportive of exploring further administrative and support-service integration.

The recommendation from the majority of study participants for further integration, including some level of the operations, seems to be a reasonable

consideration given the conclusions noted thus far in the categories of advantages, disadvantages, and financial impacts. Before reaching a fully informed decision on the subject matter, the next two sections address the obstacles that may interfere with advancing integration as well as the opportunities that may enhance the success.

Obstacles to Integration

Case study sites and Hamilton focus groups: As I previously noted, for the purpose of this study I defined obstacle as an issue or event that has the potential to limit the success of an integration initiative, but reasonable interventions can counteract any negative impact. This section reports the obstacles to Fire and EMS integration in the following eight subcategories: (a) labour issues, (b) cultural issues, (c) change management, (d) leadership practice, (e) Fire or EMS domination, (f) entry-level education for firefighters and paramedics, and (g) provincial funding⁴ (Table 6).

Labour Issues

Findings from the case study sites and Hamilton focus groups: Labour issues was one of the largest subcategories of obstacles to advancing Fire and EMS integration. All of the case study participants who cited labour obstacles claimed that having two unions representing the frontline staff was a key impediment to any service that was considering moving toward operational integration because each discipline would feel threatened. One participant stated that “with the current management and bargaining unit structure that includes two unions, it would be impossible to move to operational integration, and it would just create more challenges.” All of the participants who suggested that one union

⁴ The provincial funding subcategories for entry-level education for firefighters and paramedics were informed by findings from the organizational reviews.

Table 6

*Summary Findings of the Case Study Participants' or Focus Groups' Identified**Obstacles to Fire and EMS Integration*

Case study participants or focus groups citing a particular subcategory	Total of A + B	A. Case study participants	B. Hamilton focus groups
Labour	12 of 20	8 of 16	4 of 4
Culture	12 of 20	8 of 16	4 of 4
Change management	11 of 20	7 of 16	4 of 4
Leadership	9 of 20	6 of 16	3 of 4
Fire dominates or vice versa	4 of 20	3 of 16	1 of 4

represent all frontline staff admitted that it would be difficult to achieve. One participant acknowledged that any attempt to merge Fire and EMS unions would likely result in “thousands of labour relations issues, and it would require all mature individuals to satisfactorily resolve them.” The case study participants from two sites explained that the labour expectations of EMS and Fire are different and that each requires distinct management.

Two Hamilton focus groups suggested that for operational integration to be successful, there should be one union for all frontline staff. One of the focus groups' members reported that past labour inequities have hampered them from supporting any integration and that “a forced integration of fire-medics would result in a protracted and expensive legal battle over representation.” The same focus group suggested that mistrust within the workplace related to perceived labour inequities between disciplines would interfere with progress. Kanter (2002) and other authors on change management

practices, mergers, and labour relations (Atkinson & Butcher, 2003; Bleeke & Ernst, 2002a, 2002b; Duck, 1998; Fullan, 2001; Solomon & Flores, 2001) noted this type of reactive pattern. The focus groups suggested that EMS responds to many more calls per year than Fire does but has a substantially smaller workforce, and it should have at least equal representation within the union, frontline staff, and management. The same focus group also cautioned that integrating the two services could result in a challenge; namely, that “a fire-medical should be paid more than a firefighter or a paramedic.”

A third labour issue that four case study site participants raised was how an employer would deal with staff who were unsuccessful in qualifying as both paramedics and firefighters. The only labour representative who thought that this might be an issue came from a service that did not have operational integration.

Conclusion from the case study sites and Hamilton focus groups: Based on the study findings, there is good evidence to suggest that a relatively smooth transition of advancing Fire and EMS integration to an operational level requires that a single union represent the frontline staff. Alford (as cited in Haley, 2004) discussed the process of Fire and EMS integration in Winnipeg and the difficulties of having one union for frontline functions. To advance integration in Hamilton, building trust between labour representatives and the HES management would be beneficial, if not critical, to organizational relations, according to Galford and Drapeau (2003). For operational integration to succeed in Hamilton, the support of all affected union is essential; however, there have been some historical signals of reluctance from organized labour, notably involving the Ontario Public Service Employees Union, (the same union that represents Hamilton paramedics) emerging from Owen Sound, a small community in Ontario, where

Fire sought to fully integrate the services. The paramedics did not believe that they would be treated equitably in the process and persuaded the OLRB to refuse to allow the integration to occur (OLRB, 2002). This decision was later overturned based on new information; however, at this stage the paramedics effectively rallied a political response to shut down the initiative. The issue of staff having to attain and maintain dual certification in EMS and Fire creates a new burden; however, those involved in operational integration reported that it has been reasonable to manage. If the numbers of staff who are unable to achieve dual certification are proportionately low, and dual certification is not a legislated requirement for some communities, this is likely a minor obstacle that can be resolved with system design.

Culture

Findings from the case study sites and Hamilton focus groups: Eight of the 16 case study participants and all of the Hamilton focus groups identified cultural challenges as an obstacle to integration. All of the case study participants contended that cultural issues create obstacles to integration; for example, (a) Fire follows a rank structure in making decisions, whereas EMS relies more on a scientific approach; (b) "Fire has 200 years of service unaffected by change"; thus, it would be difficult to merge Fire with EMS towards a unified culture; and (c) managing different cultures can take up more senior-staff time.

The examples of cultural issues that the Hamilton focus groups cited as obstacles to integration include the following: (a) Fire relies on a rank and structure model for decision making, whereas EMS uses critical thinking; and (b) it has taken five years to

ease conflict that was perpetuated by the different cultures, and it will likely require a full generation of workers to stabilize it.

Conclusion from the case study sites and Hamilton focus groups: My study findings suggest that cultural issues have been, and remain, an obstacle to advancing the integration of the Fire and EMS. Leschly (as cited in Carey, 2001) and Krell (2001) supported the need to constructively address cultural issues in a merger. According to my study findings, effectively managing and merging the Fire and EMS cultures could take years of work, and the changes could be influenced by strategic organizational initiatives. Nankervis et al. (1996) concurred, and Yukl (2002) made a similar assertion that in mature organizations it is difficult to change the culture unless there is a major crisis. Although all of the Hamilton focus groups identified cultural issues as an obstacle to integration, they also noted that there have been cultural improvements since 2000.

Change Management

Case study sites and Hamilton focus groups: Change management practices are the third most predominant obstacle to advancing integration according to the study participants (Table 6). All of the case study participants cited examples of change management obstacles, including (a) EMS's treatment as a guest in the Fire buildings, with limited input into the changes; (b) the perceived preferential treatment of Fire; (c) the resistance of many older staff to new roles; (d) the insecurity of many staff during the initial merger of Fire and EMS; (e) many small issues between Fire and EMS should have been resolved promptly before they became large issues; and (f) a shortage of fully qualified staff for the transition, which puts a burden on a few individuals.

The change management issues that the Hamilton focus groups identified as obstacles to integration included the following: (a) Although city officials reported that the new HES organisation was a merger of Fire and EMS, some observers suggested that it was more consistent with a Fire acquisition; (b) a disproportional representation of Fire and EMS staff were involved in the integration planning; (c) the change process lacked a clearly articulated vision to all staff, including any mention of the long-term impacts; (d) various management staff did not support integration; (e) opportunities to create a unified culture were primarily limited to senior staff; (f) staff communication was limited; and (g) the integration of Fire and EMS should have been deferred, given the many other mandatory changes that were occurring; notably, the city was amalgamating six communities, including the fire departments. In addition, the participants in two of four focus groups claimed that the change management process was too slow and that full integration should be undertaken immediately upon municipal assumption.

Conclusion from the case study sites and Hamilton focus groups: All of the case study participants, and those in the Hamilton focus groups in particular, cited change management issues. The more common themes included limits to inclusiveness, fear and resistance among staff, the timing of the changes, and the limited organizational capacity for change. Several leading authors on the management of various forms of change supported the same findings (Anders, 2002; Ashkenas et al., 2001; Austin, 2000; Carey, 2001; Chapman, 2004; Dunford, 1992; Hamel et al., 2002; Holbeche, 2001; Kanter, 2002; Kotter, 1996; Kouzes & Posner, 1997; Krell, 2001; Linden, 2003; Murray & Richardson, 2003; Yukl, 2002).

The suggestion of two focus groups that the city should have forced full integration immediately at the time of merging the two divisions is consistent with at least one change management theory. Dunford (1992) argued that conditions may develop that require prompt changes and cited the work of Dunphy Stace, who recommended that if the change initiative is expected to be strongly resisted and the change is significant, then the leaders should force change and execute it quickly. If Hamilton had proceeded with full integration in 2001, it is reasonable to conclude that it would have been largely resisted and would have required a major change. McHugh and O'Brien (1999) observed that public -sector organizations that embark on major strategic change without consultation usually fail, and given the resistance in Hamilton, it is unlikely that any consultation would have been meaningful. A full integration program in the best scenario would require a strong leadership team with a clear vision and the regulations to support the changes. Not only would Hamilton face resistance, but an independent review of the EMS management team also concluded that EMS was already challenged with maintaining the traditional service, and Fire was still focused on the merger of the six local fire departments (IBI Group, 2000a, 2001). Introducing an unproven service model that would require forced change while maintaining daily performance would have meant taking an inappropriate level of risk with an emergency service. In addition, IBI Group (2000a) cautioned that if Hamilton were to fully integrate, it could anticipate significant regulatory obstacles, higher labour costs, and difficulty applying the provincial EMS grant process to an integrated model and risk up to 50% of the annual EMS operating budget. The threats to successful full integration in 2001 overshadowed the potential benefits.

Leadership

Findings from the case study sites and Hamilton focus groups: Poor leadership practices were the fourth most predominant category of obstacles to integration that case study participants and Hamilton focus groups identified. The participants from two case study sites offered five key examples of perceived leadership issues that presented integration obstacles: (a) limited consultation and applied autocratic practices, (b) a lack of necessary leadership will and courage for integration, (c) managers who were ill-equipped to address the opposition to integration, (d) Fire's promotional practices based on seniority instead of merit, which limit the leadership capacity, and (e) a combined service leader biased towards Fire.

The participants from three of the four Hamilton focus groups provided examples of leadership issues that are obstacles to integration: (a) the limited leadership talent of some senior management staff to facilitate integration, (b) the limited motivation of some senior management staff to facilitate integration, and (c) the leaders' failure to formulate and/or articulate a strong vision of integration.

Conclusion from the case study sites and Hamilton focus groups: Many of the case study participants' examples of leadership obstacles to integration were evident in the Hamilton focus group findings, and they matched the findings from my literature review. Those responsible for introducing a merger or a change initiative require (a) different skills, (b) a higher level of competence, (c) higher levels of motivation, and (d) an unbiased purpose, all consistent with Bowditch and Buono's (1994) description of a transformational leader as an agent of change. Although the existing staff may be well suited to the regular tasks that they were hired to perform, they may not be the best

candidates to lead a major change initiative, and they likely already face significant time constraints. Even if the talent exists within an organization, there are few compensatory mechanisms to match the rewards to the added effort of leading a change project, particularly in the public sector. The motivation to assume the added work that an integration project would create for a leader depends primarily on the intrinsic rewards of the task rather than monetary compensation (Kouzes & Posner, 1997).

Addressing the topic of Fire's promotional practices, some case study participants claimed that it would degrade the leadership calibre based on an unproven assumption that a merit based approach more typically used by EMS yields superior results, and even if there was evidence of a superior method that it would with all certainty default to the Fire method.

Fire or EMS Domination

Findings from the case study sites and Hamilton focus groups: The sixth most predominant obstacle to integration was the fear of either Fire or EMS domination. All of the case study participants who identified unilateral organizational dominance as an obstacle to integration were exclusively from a site that had unsuccessfully attempted operational integration. Two of the three case study participants specifically stated that their caution applied to cases in which Fire would dominate EMS. They insisted that this was not a current concern, but rather was related to a previous attempt at operational integration. One case study participant contended that EMS dominated Fire and called attention to the reduction in Fire resources in tandem with the growth in EMS resources. The participants from one case study site acknowledged Fire's dominance over EMS; however, they added that even if city council is more supportive of Fire being aligned

with the Fire profile, it would still benefit EMS in the budget process more than if EMS was a stand-alone service.

The participants from one Hamilton focus group cited Fire dominance as an obstacle to integration. One described the Fire and EMS relationship: “The only position that is integrated is the general manager, and beyond that, the Fire division is the patron, and EMS is a client.” The group felt that the generous fire station amenities compared to those of EMS stations and the fact that EMS had adopted more Fire procedures than vice versa were evidence of their theory. The focus group claimed that Fire’s dominance perpetuates professional distrust and a perceived lack of job security for the paramedics, which ultimately erodes staff morale and performance.

On a related note, the participants from the case study sites and the focus groups who were not engaged in operational integration were concerned that any integration would result in a loss of either party’s decision-making autonomy. Kanter (2002) arrived at a similar conclusion, which generally applies to any business functions that are merged. None of the participants from the operationally integrated case study sites voiced this as a concern.

Conclusion from the case study sites and Hamilton focus groups: The participants who were involved in non-operational integration identified dominance by one service as an obstacle to a successful initiative, and the dominance was almost exclusively Fire over EMS. Generally, they considered dominance by one service as having a negative impact on integration; however, there may be singular events in which organizations could benefit from some level of dominance. Numerous authors concurred that the more successful integration initiatives involve a merger of organizations that are equally strong

and enjoy an equitable voice (Anders, 2002; Austin, 2000; Bleeke & Ernst, 2002a; Kanter, 2002; Kouzes & Posner, 1997; Linden, 2003).

Other Obstacles to Integration

In addition to the findings from the case study sites and the Hamilton focus groups, other obstacles surfaced in the organizational review that may be of significance to further Fire and EMS integration.

1. Entry-Level Education for Fire

Findings from organizational review. The current entry-level requirement for a primary care paramedic in Ontario is two academic years of postsecondary education, whereas it takes four months to train as a firefighter. The time variance favours dual training paramedics as firefighters as the least expensive option. However, based on the findings from the case study sites, the Hamilton focus groups, and my literature review, treating staff equitably is important to the success of a merger (Anders, 2002; Austin, 2000; Kanter, 2002; Kouzes & Posner, 1997; Linden, 2003). To treat both disciplines equally and offer dual training to both could substantially raise the cost of implementing operational integration.

2. Entry-Level Education for Firefighters and Paramedics

Conclusion from organizational review. It is unlikely that the two Fire unions in Hamilton, which represent over 700 career and volunteer firefighters, would be willing to play a lesser role in the integration process, compared to approximately 170 paramedics. The firefighters likely would insist on being dual-trained, and even if HES could commit financially to this model with the two-year paramedic course, scheduling the firefighters into the course would take several years. Ultimately, the slower pace of change may limit

the opportunities to demonstrate the success of the initiative and compromise the momentum of change to the extent that it becomes challenging to maintain essential support from the senior management (Murray & Richardson, 2003).

3. Funding Limitations

Findings from organizational review. Although operational integration may be advantageous theoretically, current Ontario legislation does not formally recognize the work hours of dual-trained firefighter paramedics unless the rescuer exclusively works on a provincially recognized EMS vehicle and meets paramedic qualifications (Ambulance Act, 2000). No Fire truck meets provincial standards for ambulances, and it would be difficult to adapt a fire apparatus to meet the EMS vehicle standards. If a municipality could overcome this obstacle, it would then need to have a means to prove the number of hours that the dual-trained fire-medic was exclusively working in EMS to support the MOHLTC financial reporting requirement. If fire-medics were also available for fire coverage, the MOHLTC could reasonably argue that the fire coverage time is not attributable to EMS and therefore not eligible for MOHLTC EMS grant money. This could would threaten as least some of the provincial grant entitlement, which is up to 50% of the operating costs.

Conclusion from organizational review. The current use of a fire-medic model without any changes to the MOHLTC funding process would at best threaten the eligibility for the 50% provincial funding grant or could potentially eliminate the grant, which would marginalize any improvements to system effectiveness and efficiencies and presenting a formidable obstacle to advancing operational integration.

Summary of Obstacles to Integration

Hamilton should consider a number of obstacles to advancing integration in its analysis of the efforts required to proceed successfully. The next section is a review of the opportunities that may maximize the potential success of HES Fire and EMS integration.

Opportunities for Successful Fire and EMS Integration

Findings from the case study sites and Hamilton focus groups: The participants from the case study sites and the Hamilton focus groups identified areas that may present opportunities to extend the success of Fire and EMS integration: (a) leadership practices, (b) change management, (c) labour relations, (d) staffing, (e) operations, and (f) recruitment and retention (Table 7).

Table 7

*Summary Findings of the Case Study Participants' or Focus Groups' Identified**Opportunities With Fire and EMS Integration*

Case study participants or focus groups citing a particular subcategory	Total of A + B	A. Case study participants	B. Hamilton focus groups
Leadership	16 of 20	12 of 16	4 of 4
Change management	16 of 20	13 of 16	3 of 4
Labour	5 of 20	5 of 16	0 of 4
Staffing	3 of 20	3 of 16	0 of 4
Operations	2 of 20	2 of 16	0 of 4
Recruitment and retention	1 of 20	0 of 16	1 of 4

Leadership

Findings from the case study sites and Hamilton focus groups: The case study participants and the Hamilton focus groups identified leadership practices as the most predominant subcategory of opportunities that maximize the potential for successful integration.

The suggestions for enhancing the success of integration were representative of all case study sites. The common themes included (a) working as a team in an equal partnership; (b) unbiased leaders being supported by other strong leaders in EMS and Fire, including the union representatives; (c) maintaining a resolve to succeed; (d) respecting the past culture while creating a new one; (e) putting the right people in the right seats; (f) creating and communicating a strategic plan; (g) building trust and respect through transparency, inclusion, and empowerment; and (h) managing the plan rather than the details.

The Edmonton site provided the strongest evidence for good leadership. Six Edmonton case study participants described personal experiences in which the current leadership style of the general manager of the Emergency Response Department, the Fire Chief, the EMS Chief, and the union presidents was instrumental in the success of the current model. They all freely gave the general manager credit for his unbiased and inclusive leadership style that led to the successful transformation of the team.

All of the Hamilton focus group participants claimed that leadership practices such as the following could materially enhance the success of integration: (a) selecting an unbiased leader to oversee both fire and EMS functions, (b) displaying the leadership courage to identify whether there is the collective will to integrate, (c) identifying one

manager who would be solely dedicated to lead integration, (d) selecting or assigning highly skilled change leaders, and (f) appropriately assigning positions and tasks.

Conclusion from the case study sites and Hamilton focus groups: The case study sites and the Hamilton focus groups collectively provided a breadth of examples to support the importance of quality leadership to further Fire and EMS integration. The case study participants and the Hamilton focus groups stressed that leadership practices are extremely important to maximizing success and that inappropriate leadership practices present obstacles. The participants' responses highlighted the significance of having the best leaders who (a) are not influenced by a bias for Fire or EMS, (b) have strong skills in guiding a team in a collaborative and respectful manner, and (c) have the courage to execute a challenging work plan. Numerous authors (Collins, 2001b; Kouzes & Posner, 1997; Yukl, 2002) who have identified important leadership attributes that contribute to business success and sustainability reported similar findings.

Change Management

The collective findings from the case study sites and the focus groups reveal that the participants saw effective change management processes as the most influential factor in maximizing the success of integration. Common themes for change management success included (a) establishing an open and trusting change process to facilitate constructive resolutions to interpersonal and interorganisational conflict; (b) establishing a new culture while respecting past cultures; (c) establishing clear, jointly developed objectives and creating a change plan; (d) establishing and maintaining a robust, two-way communication plan that engages all staff; (e) establishing inclusive and focused working committees; (f) addressing staff fears early; (g) assisting staff who do not support the

change in finding other opportunities; (h) providing incentives for achievements that support the change; and (i) pacing the change process.

With regard to change management practices that are important to Fire and EMS integration, three of the four Hamilton focus groups cited the following:

(a) acknowledging that two cultures exist and planning a respectful transition to one, (b) developing objectives and a change plan with early and comprehensive stakeholder consultation, (c) anticipating and addressing staff resistance, (d) having sufficient staff support to conduct the added work, and (e) planning for slow-paced change.

Conclusion from the case study site and Hamilton focus groups: The common themes that the case study participants and the Hamilton focus groups identified related to change management and advancing Fire and EMS integration included (a) respectfully acknowledging the two cultures and facilitating a transition to a unified culture, (b) having a robust communication plan, (c) jointly developing objectives and a work plan, (d) constructively addressing staff fears and resistance, and (e) proceeding slowly with the change. In his discussions on change management theories, Dunford (1992) generally support all of these themes except for the speed of change. He advocated using a contingency model for change in which the approach is tailored to suit the situation and ranges from participative and slow to dictatorial and fast.

In the previous section of this chapter I discussed change management issues as obstacles to integration. The change management issues that the study participants identified as obstacles were similar to the change management opportunities. The overlapping areas include (a) mutual respect, (b) staff confidence in their job security, (c) setting a clear unified vision and objectives, and (d) proceeding at a pace that is

acceptable to the parties involved. Although all of the change management issues addressed are important to consider, these areas deserve particular attention because they need to be well managed not only to minimize the obstacles, but also to maximize the opportunities.

Labour Issues

Findings from the case study sites. Five of 16 case study participants suggested that effectively managing labour issues creates opportunities to enhance the success of integration. Among the case study participants' examples of important labour initiatives that would positively influence the Fire and EMS integration were solid labour-management relations built on trust and one union to represent all frontline unionized staff. One of the participants suggested that operational integration would create an opportunity to compensate staff equally, thereby facilitating a positive labour environment.

Conclusions from study sites and Hamilton focus groups: Covey (2004), Duck (1998), and Ashkenas et al. (2001) highlighted the importance of labour relationships' being open and trustworthy to improve the success of change and business partnerships, which is congruent with my findings. With regard to union representation, if an organization has one union agent for all frontline staff, it seems logical that an initiative to integrate the different disciplines could be simplified because there would be no competing union interests. As it applies to the equity of Fire and EMS, if a community can afford to equalize Fire and EMS compensation packages, this may create support for further organizational integration; however, there is a risk that some staff from either

discipline or other city departments would feel that there is a job difference and that it should be compensated accordingly.

Staffing

Findings from the case study sites and Hamilton organizational review. Three of 16 case study participants cited staffing initiatives as providing opportunities to advance Fire and EMS integration. One participant suggested that having a dispatch service for the combined services and staffed with civilians who have never worked in either discipline would improve the results of integration because they will not have a bias. Two participants involved with operational integration advised that it is essential to sufficiently staff the organization during the change process to address emerging issues and ultimately maintain support for the change. They also proposed including some positions that would allow staff with legitimate limitations to remain within their original discipline. A third suggestion was to provide more resources for street supervision.

In Chapter One I reported that one reason for considering Fire and EMS operational integration is the number of Hamilton firefighters who are eligible to retire in the next six years (City of Hamilton Environmental Scan, 2004). If the majority of the new paramedics that Hamilton hires were already trained as firefighters, it could provide a feeder of qualified, dual-trained staff during the period in which the firefighters are leaving HES in large numbers.

Conclusions from study sites and Hamilton organizational review. Although one case study participant suggested that hiring civilian dispatchers would facilitate Fire and EMS operational integration, this function is not currently within HES's control. The findings also suggest that correctly staffing an organization during the change process is

important, and this would seem to have merit. Dunford (1992) claimed that the volume of work typically is substantial in the initial phases of change processes. It seems reasonable to keep staff who are excellent contributors to the team even if they can qualify only within the one discipline, provided that there are firm guidelines with regard to the exceptions so that they do not limit the long-term organizational success of the integrated initiative. Some of the findings suggest that there should be more street supervision, which may have merit; however, Nanda and Williamson (2002) pointed out that when an organization engages in a partnership venture, all levels of staff will have more work during the transition period. I suggest that right-sizing the staffing resources for all levels should be the focus and that in the interim stage dual-trained staff in Fire or EMS should be hired to begin building the staffing potential for an integrated system and to allow HES to take full advantage of any circumstances that arise, such as new permissive legislative changes.

Operations

Findings from the case study sites. Two case study participants identified operational initiatives as providing opportunities to advance Fire and EMS integration. Specifically, they suggested that staff assigned to EMS duties have a separate sleep area to eliminate conflicts related to on-duty rest at night; however, none of the comments came from participants who were currently working in an integrated environment. The participants also felt that stations designed with some common and individual space for each discipline facilitate important informal exchange while respecting individuality. Consultants KPMG (1999) noted in their *Fire and Ambulance Services Station Location and Facilities Study* that common sleeping quarters for Fire and EMS would result in

staffing conflicts. Becknell (2002b) supported this observation and claimed that the typical fire station design is not sensitive to the difference in Fire and EMS call volumes. McGrath (2000) agreed with the case study findings and suggested that a well-designed Fire and EMS station design that considers the difference between the EMS and Fire duty provides an opportunity to facilitate a collaborative relationship while respecting the differences in call demands and opportunities for rest. Kanter (2002) proposed that, to successfully merge work groups, the leaders should assign an integrated technical project that promptly brings staff together to work, learn, and merge the cultures while they are immersed in day-to-day tasks. Other change management authors concurred with this concept (Augustine, 1998; Murray & Richardson, 2003). Extending this idea while acknowledging the differences in the response demands of Fire and EMS, a station designed with separate sleep quarters to limit conflicts, but with a common area that facilitates a merger of cultures, can create a healthy station template.

Conclusions from study sites and Hamilton focus groups: It seems reasonable to conclude that if Fire and EMS share stations, the design of the facility can facilitate smooth operations of the station and may contribute to positive staff exchanges and a merger of cultural norms.

Summary of Opportunities for Integration

If Hamilton were to decide to proceed with further integration, the City can focus its efforts on some distinct areas. The study findings and my literature review revealed that the quality of leadership and change management are two key elements of successful integration initiatives, although they can equally turn into obstacles if handled poorly. By focusing on the quality of leadership, change management, and labour relations, not only

is the organization overcoming impediments to integration, but it is also concurrently enhancing the chance of change success.

The next section summarizes the study findings and conclusions from the case study sites, the Hamilton focus groups, and all other study sources that have informed my recommendations on the level of integration that would be feasible for HES.

Summary Discussion of Fire and EMS Integration in Hamilton

Hamilton finds itself with a reasonable opportunity to consider Fire and EMS integration based on (a) the positive working relationship that the two services have enjoyed over a number of decades, (b) Fire and EMS's sharing the same response zone boundaries, and (c) the lack of legislation to strictly forbid the model, balanced by the land ambulance funding grants that may discourage such a venture.

The foregoing discussion considers my cumulative findings from (a) the literature review of Fire and EMS experiences; (b) the literature review of strategic alliances, mergers, acquisitions, and major change initiatives; (c) the case study sites; and (d) the Hamilton focus groups. Appendix B provides a summary table that illustrates emerging common themes across the data sets.

Based on a review of all four data sets, the potential advantages of HES's further integrating Fire and EMS include enhanced service efficiency and improvements in service effectiveness. According to the responses from the case study sites and focus groups, a better workplace for staff has potential. The study findings also suggest that integration may yield financial advantages, with the majority of savings likely realized at the administrative and support levels and further but diminishing returns with the progression to a dual-training system.

A balanced consideration of Fire and EMS integration requires a review of the potential disadvantages, where there was less agreement across the data sets. The case study participants and Hamilton focus groups identified some operational and recruitment and retention issues in the form of maintaining staff levels that can meet the concurrent demands of both services and considering employment exceptions for those who cannot qualify in both disciplines. Considering the literature review findings and the experience of the case study sites, the issue of additional training needs for dual-trained staff requires calculated consideration.

My summative assessment is that by extending integration in Hamilton, the potential advantages carry greater weight than the disadvantages. There seem to be cost-avoidance opportunities with further integration, and the case study participants and the majority of the Hamilton focus groups supported advancing integration. However, one key focus group was reluctant to advance operational integration.

If the City of Hamilton officials agreed that there is potential merit in further integrating Fire and EMS, the next step would be to consider the potential obstacles, which can include (a) labour issues, (b) cultural gaps between Fire and EMS, (c) the need to follow best-practice change management and leadership principles, and (d) the need to ensure that neither Fire nor EMS dominates. In addition, it is essential to support the merging of Fire and EMS dispatch and to ensure that the MOHLTC EHS recognizes dual-trained fire-medics' response times and ambulance grant-funding eligibility.

Although, as noted, change management and leadership practices can sabotage the success of an integration initiative if mishandled, the study findings also show that proper change management and leadership practices can accelerate the opportunity for success.

Therefore it is essential that the management team be highly skilled in leading the team and guiding the change processes.

Summary Conclusion

Anthony and Young (2003) noted that “many non-profit organizations have instituted measures to improve employee productivity . . . [and] in some instances these measures call for consolidation of activities across two or more organizational units” (p. 581). Ultimately, the subject of this review was to consider Fire’s capacity to assist EMS. Specific to the EMS industry, Fitch (2004a) suggested that establishing partnerships to produce higher quality EMS and medical transportation will be a future necessity, and in the case of HES, a partnership with Fire has been considered. HES accepted the principle of establishing partners when Fire and EMS merged the administration and support functions; thus the next logical question, which was my original research question, is, *What level of integration is currently feasible in Hamilton?* My summary conclusion, informed by my findings from the literature review, my organizational review, and the data collected from the case study sites and the Hamilton focus groups, is that the level of Fire and EMS integration that is currently feasible in Hamilton will further maximize any opportunities in the support and administration domains. There is support for working towards a model of operational integration appropriate to Hamilton, guided by a collaborative effort of equal partners, Fire and EMS, and beginning with an expanded role for fire-medics in tiered response, provided that the many key obstacles are mitigated.

Study Summary Recommendations

Recommendation 1

HES should advance Fire and EMS integration in administration and support services and then further into operations, beginning with enhancing the capabilities of firefighters involved in tiered response to the extent that it (a) is achievable, (b) benefits the public, (c) is supported by the organization, and (d) maintains or improves the work environment for the majority of HES staff while considering the minority work groups.

The study findings demonstrate that further integration in support services and administration is feasible. This is particularly reasonable in administration, where the deputy chiefs and the assistant deputy chiefs in Fire and EMS are nonunionized and represent the key organizational leaders. Changes in this group should be relatively easy to implement, present opportunities for efficiencies, and send a leadership message about the values and vision of senior management to the staff and key stakeholders. Covey's (2004) discussion of the four roles of leadership supports the importance of a consistent message from key staff.

The study findings suggest that proceeding with operational integration offers opportunities for the service, the community, and the staff; however, the respondents from all three case study sites reported that their change processes might have disadvantaged minority groups of staff. Fitch (2004b) acknowledged the importance of doing what is best and supported to improve the service to the public and that it is equally important to consider worker safety and satisfaction. Hamilton should aim to provide equitable and respectful treatment of the HES employees during any change process to

maintain a united, skilful team committed to a shared, integrated vision that is also consistent with the concepts that Yukl (2002) endorsed.

Recommendation 2

To further Fire and EMS integration, HES should provide the appropriate environment and support to maintain an HES senior management team that is committed to considering an unbiased integrated-service model and highly skilled in change management and leadership practices.

Experience in the case study sites and in Hamilton demonstrates that the integration of Fire and EMS will require exceptional, unbiased HES leadership with an unwavering commitment. The leaders, in addition to requisite technical knowledge, must possess traits such as humility, honesty, and integrity and have excellent communication skills. Yukl's (2002) work supports the study findings, which point to the necessity for competent leaders to steer an organization through change processes.

Recommendation 3

To achieve broad-based support for further Fire and EMS integration, HES should launch a multidisciplinary change management team to establish a collaborative and flexible vision of the preferred integrated model, guided by the criterion in Recommendation 1, followed by a communication strategy to express the vision to all HES staff and clients.

The participants from all of the case study sites and the Hamilton focus groups stressed the importance of inclusion in creating a collaborative vision to achieve a successful and sustained organization, a concept that Yukl (2002) advocated. Yukl also endorsed the concept of using a team to advance the change initiatives because the

support needed to execute major change is too big for one individual. Druskat and Wolff (2001) asserted that for a team to be more creative and productive, it needs to have “high levels of participation, cooperation, and collaboration” (p. 83). With regard to developing the vision, Senge (1994) contended that “when there is a genuine vision people excel and learn, not because they are told to do so, but because they want to” (p. 9). Whitely (1995) added that a “shared vision will lead to a shared culture” (p. 22). Herzlinger (1999a) endorsed using broad communication strategies in government-agency accountability and cautioned that the agency “information should be widely disseminated and easily obtained” (p. 14).

Recommendation 4

Based on an integrated vision for HES, the HES multidisciplinary change management team should establish and execute a flexible work plan that addresses the obstacles and opportunities attributed to integration and that facilitates an organic evolution of change informed and adjusted based on continuous disciplined analysis.

My study findings support the need to remove the obstacles to integration and suggest that HES should be positioned to maximize on opportunities that arise. To ensure that changes are managed successfully, the change team should create a collaborative work plan that is paced to allow staff reasonable time to execute the objectives and the flexibility to allow for adaptation, concepts that Sachs (1997b) claims may be the preferred approach when extending the role of Fire into EMS. Heifetz and Laurie (1998) proposed that it is the leader’s role in executing change to pace the process and allow issues to be resolved in a phased-in approach. Whereas the change management plan is necessary, it should not be a detailed prescription because it may limit innovation and

require comprehensive management oversight in an environment in which it is impossible to forecast all of the evolving issues (Senge, 1999; Yukl, 2002). Continuous evaluation of the interventions is essential to allow the organization to modify the plan based on a changing environment while being accountable for its results, as Herzlinger (1999a) and Yukl advised.

CHAPTER FIVE – RESEARCH IMPLICATIONS

Organizational Implementation

One of the fundamental purposes of the MALT major project is to create the possibility for positive change in the sponsoring organization. The study recommendations form a general guide to how the organization might achieve further integration. This chapter suggests an implementation process based on the four recommendations noted in Chapter Four and discusses other areas of significance that need to be addressed, including (a) labour obstacles, (b) cultural considerations, (c) change management, (d) leadership considerations, (e) dominance by one discipline, (f) funding, (g) CACC, and (h) entry-level paramedics. I have included a discussion of the implications for those involved in a Fire and EMS integration change, as well as the implications of not implementing the recommendations.

Recommendation 1 and Steps for Internal Review of the Study Document

HES should advance Fire and EMS integration in administration and support services and then further into operations, beginning with enhancing the capabilities of firefighters involved in tiered response to the extent that it (a) is achievable, (b) benefits the public, (c) is supported by the organization, and (d) maintains or improves the work environment for the majority of HES staff while considering the minority work groups.

For the study project to have value beyond myself as the researcher and the direct participants, it is imperative that those leading HES consider the study findings and conclusions. With the support of the project sponsor, I should facilitate a review of the study report with the project advisors, the local study participants, and the senior HES

management team. This review will serve multiple purposes. First, it will demonstrate respect for the contributions of those in the workplace who assisted with the study. Second, this approach can begin to identify who may be the representatives in future work on this project and contribute to the birth of a new, inclusive HES culture that is aligned with the HES strategies and practices (Vecchio, 1995). The participants from the case study sites and the Hamilton focus groups stressed that the key participants in an integration initiative should be part of the decisions at the start of the process, and this suggestion will fulfil that objective.

Once the senior staff have had an opportunity to consider the document, copies of the final report should also be circulated to the key stakeholders, followed by a presentation of the study report, including a question-and-answer period. Broad communication to all staff, using multiple media strategies, and transparency in the process is consistent with the suggestions from the participants from every case study site, the Hamilton focus groups, and the findings from the literature. To remain consistent with the action research principles and to build a culture of discipline analysis, any constructive feedback should be solicited, collected, and considered in a structured format.

It is also important to demonstrate appreciation to the participants from the case study sites for their valuable contributions and to maintain integrity with the research community. To fulfil that responsibility, the case study sites should receive copies of the final study, and, in a teleconference format, I can provide them with the opportunity for two-way dialogue. If other jurisdictions are interested in the study findings, I should reasonably avail myself to answer inquiries by phone and/or e-mail.

This study has potential implications beyond the immediate study area, including the case study sites that participated in the project. Asking the case study sites, the Hamilton focus groups, and all others to participate in a critical appraisal of the final report supports the principles of action research regarding inclusion and participation. Failure to include this step has the potential to cause those involved to become disillusioned with their role, it may discount the study findings, and it may affect any future studies that HES might wish to conduct.

The final step in this review process will be for the HES leadership team members to decide whether they collectively support the study's summary conclusion and recommendations. If after undertaking the above steps there is a leadership consensus that HES should consider proceeding with some form of further Fire and EMS integration, then the HES leaders can turn their attention to the practical application of the remaining recommendations.

Recommendation 2 and Steps for Senior Management Leaders

To further Fire and EMS integration, HES should provide the appropriate environment and support to maintain an HES senior management team that is committed to considering an unbiased integrated-service model and highly skilled in change management and leadership practices.

The HES chief will need one key champion to lead the integrated model devoid of bias for any one discipline. Heskett (1998), in describing how the commissioner of the NY Police Department transformed its performance, noted that his success was based largely on "identifying the people that would drive the change; . . . they became part of the team" (p. 146). Yukl (2002) cautioned that it is essential to fill key positions with

competent change agents who have the requisite skills and drive to remain committed to the task. The importance of leaders' being free of bias was clearly identified by key Hamilton focus groups and further supported by the participants from the Edmonton case study site, who reported that changing the leadership practice revolutionized the success of their organizational change.

Complementing the integration champion, the HES chief should identify other key staff from the management team to focus on the change process and consider equal representation from Fire and EMS in the selection. The Hamilton focus groups clearly identified the need for equal representation. Having more than one leader is also important to provide sustainability above and beyond the expectation that the change initiative will extend over a protracted period. Various authors, including Collins (2001b), Goleman (2000), Kouzes and Posner (1997), and Yukl (2002), stressed that the leader must (a) have a passion for the task at hand, (b) have courage, (c) be humble, and (d) be willing to share success and take disciplined risks. These are amongst the key attributes that the HES chief must ensure that the leaders of the change team have.

Those assigned to lead the change process will need time, leadership and change management education, and resources to be successful. Senge (1999), a key author on change management, highlighted the need for appropriate resources to effectively lead change. The HES chief should identify with his staff the resources that they will require to effectively lead the program, taking into account that in the initial phase the requirements will be substantive. Those assigned major project responsibilities will also need sufficient support to still be successful in their regular duties, which may require surrogate staff for the transition period. Senge suggested a number of useful steps to

recover time from existing resources: (a) Eliminate unnecessary tasks, (b) consolidate the list of what is to be achieved with what requires minimal effort but has high returns, and (c) create scheduling flexibility. The key leaders should also be granted opportunities to continuously upgrade their leadership and change management skills.

If HES chooses to proceed with further integration but does not secure the appropriate staff and support to champion the change, the chances of success diminish—a caution that the case study participants clearly expressed. It is important to the credibility of the organization and to the future consideration of mergers that HES take a realistic approach to time and resource allocation so that the outcome of the project reflects the merits of the concept rather than any barriers created by the organization's commitment or lack thereof.

Recommendation 3 and Steps for a Change Management Work Group

To achieve broad-based support for further Fire and EMS integration, HES should launch a multidisciplinary change management team to establish a collaborative and flexible vision of the preferred integrated model, guided by the criterion in Recommendation 1, followed by a communication strategy to express the vision to all HES staff and clients.

To establish the multidisciplinary change management team, the HES leaders will need to scope out the groups who are required to provide representation for an appropriate level of consultation that includes key stakeholders. It is evident from the study findings that many of the participants from the case study sites and focus groups would advocate equal Fire and EMS representation on the team, as well as representation from management and labour. The spectrum of representation in the study may be a

useful guide (i.e., Fire and EMS labour and management, labour relations, finance) to establish a core group who could then determine the future composition. Given the type and potential magnitude of changes being considered, an organization development expert would be a reasonable addition. With the groups defined, a process will then need to be established to select the representative for each seat.

The change management team's first task should be to establish terms of reference that align with the City of Hamilton's values, vision, and objectives (City of Hamilton, 2002; 2004a). This group can then develop a flexible, integrated HES Fire and EMS vision with the intent that it will remain applicable for a reasonable period. The product of this work then requires the development of a communication strategy to ensure that the vision, mission, and objectives are conveyed and understood by the intended audiences. The communication delivery should include two-way feedback to fulfill the principles of action research as an ongoing interactive process of change (Stringer, 1999). Clemmer (1995) highlighted similar concepts to guide organizational change and noted the importance of a cycle of review, assessment, celebration of successes, and refocused efforts. HES will need to provide the necessary resources and staff time to support the change management team.

Challenges can be expected in implementing Recommendation 3. Representation on the multidisciplinary change management team will predictably require excellent negotiation skills to deal with the anticipated competing interests for representation or, if there are unwilling parties, a boycott of the process. An issue that was evident in recruiting the study advisory team is the practical matter of whether and how staff will be compensated for their participation in the work group. The conviction of the HES leaders

to ensure a principled change process that is devoid of bias will be critical at this stage to establish a healthy culture of respectful dialogue between the disciplines as they set the vision. Aiello and Watkins (2001) succinctly framed the importance of the team selection and its healthy functioning: “No team can make a bad deal good, but a bad team can make a good deal bad” (p. 38). If a change team cannot successfully navigate the key challenges, does not represent the key stakeholders, or lacks a cohesive vision, it is likely that the success of the change initiative will be limited.

Once the HES integration vision has been communicated to the community and been tested by the rigor of constructive feedback, the HES change management team can move to the next phase of the work.

*Recommendation 4 and Steps for an Integration Work Plan
and Continuous Disciplined Analysis*

Based on an integrated vision for HES, the HES multidisciplinary change management team should establish and execute a flexible work plan that addresses the obstacles to and opportunities for integration and that facilitates an organic evolution of change informed and adjusted based on continuous disciplined analysis.

Yukl (2002) argued the merits of a graduated implementation plan with performance objectives to continuously measure progress. This approach allows for staff and stakeholder adjustment and participation in the process, which Dunford (1992) recommended. The first step in creating the work plan for the change management team is to review the study findings, identify the obstacles and opportunities with which they agree, and add others if there is evidence that they should form part of the plan. Once there is a consensus on a task list, the team can then rank the priorities and assign

subgroups to problem-solve for realistic solutions. Establishing subgroups to focus on specific tasks is a concept that Yukl (2002) championed as a technique to successfully lead organizational change. There may be pressure to address many issues immediately and concurrently; however, based on their study of change management, Murray and Richardson (2003) suggested that the organization refrain from making too many concurrent changes. Not only is it important to balance the number of changes with the capacity of the organization to execute them effectively, but the incremental approach also allows the organization to measure and attribute the outcomes to the intervention (Schaffer & Thomson, 1998). Senge (1999) espoused the approach of starting small to allow the new activity to “percolate out into the organization” (p. 55) and evolve rather than be forced.

It is essential in conducting change processes that they be supported by continuous evaluation to maintain an inventory of the progress and a current overview of the organization. Each intervention should be measured for its impact and the results used to guide future actions. This behaviour supports continuous quality improvement processes (Robertson & Ball, 2002) and Stringer’s (1999) principles of action research. This scheme may also allow a regular information stream for the leader to keep staff informed of progress, and, where appropriate, it can be used to celebrate achievements—all practices that Yukl (2002) claimed will have a positive influence on change management initiatives. Although not the sole measure of performance in a nonprofit organization, a financial analysis of each change should be included. Anthony and Young (2003) suggested that full cost accounting is not preferred in assessing “alternative choice decisions” (p. 272); instead, they advised focusing on “differential costing” (p. 272) while

considering fixed, variable, and semivariable costs. Financial services should be engaged to assist with the continuous evaluation process.

If Recommendation 4 is not acted upon, it is difficult to contemplate how integration could be successful. A work plan needs to accompany the vision as a map to the destination. The purpose of the work plan is to establish intermediate targets and, as they are achieved, to build and maintain support for the change initiative. Without measuring and celebrating the intermediate successes, the change process is likely to lose support. It is also important to pace the changes. Forcing change too fast is likely to create staff resistance and not yield the desired sustained changes, a phenomenon that Fullan (2001) described. Conversely, if the change proceeds too slowly and is devoid of measured short-term wins, the initiative can lose momentum and staff support (Kotter, 1998). If regular and disciplined analysis is not conducted, it will be more difficult to adjust the change initiatives to reflect the needs of an evolving environment.

Addressing the Key Obstacles

The following section provides the highlights of some of the key obstacles and suggestions on how they can be managed.

Steps to Address Labour Issues

Labour issues are one of the major obstacles to advancing Fire and EMS integration, and the key element to consider is the number of unions that represent frontline staff. Any change in that situation likely requires freely negotiated reductions led through the collective bargaining process. Alternatively, it is conceivable that, in a changing labour environment, the staff may conclude that it is in their best interest to have a single union and decide to lead this change themselves. Changing or reducing the

number of representative bodies is complex, and all parties should have labour-law advice to make informed and transparent decisions. Any discussions with the employer must be conducted within the permissible legislative framework. If there is a vision for future and further integration as collective agreements are negotiated, grievances considered, or standing operating guidelines revised, resolutions should be crafted to harmonize with the common HES objective where possible and reasonable. These activities can narrow gaps between Fire and EMS while demonstrating the organization's commitment to the vision and building labour management trust for the plan. Numerous authors on the matter of organizational change, mergers, and leadership emphasized that authentic trust between the parties is an essential ingredient to a successful relationship or initiative (Atkinson & Butcher, 2003; Duck, 1998; Fullan, 2001; Kanter, 2002; Solomon & Flores, 2001). Although the working group cannot involve itself directly in labour relations, the key management members can work towards further nonmanagement integration by providing the necessary leadership by example. If the management does not demonstrate its own commitment to equity and to building a positive, integrated environment, it would be reasonable to expect a lack of union support for the change.

The labour challenges, if ignored, are likely to lead to the demise of any attempts to further the integration of Fire and EMS. The Owen Sound case illustrated that by either applying labour law or using the political structures, the organized workforce has the experience in Ontario to be able to successfully derail the integration initiative if it chooses to do so (J. Saunders, personal communication, March, 8, 2006).

Steps to Address Cultural Considerations

Culture is another area that requires some focused attention from the change management team. Although all of the Hamilton focus groups reported that the culture gaps between Fire and EMS are an issue that should be addressed, they were optimistic of the outcome. A logical plan is to begin with a cultural inventory, which can begin with a review of the organizational chart and continue with face-to-face interviews to determine where there are leverage opportunities. Deal and Kennedy (1999) described this as a process that is applicable to mergers. The change management team can then collaboratively develop strategies to nurture the evolution of a unified culture, which, according to Kanter (2002), is the preferred outcome.

According to the Hamilton focus groups' accounts of local experiences, what have been successful since 2001 when Fire and EMS merged under HES are respectful tactics that recognize the independent processes of each discipline with a slow movement towards a common culture. Belton et al. (1982), in their review of various integrated Fire and EMS services, claimed that forcing EMS to adopt the Fire hierarchical relationship results in both sides failing. They recommended that a new culture be formed that is a hybrid of Fire and EMS. Whitely (1995) described a similar approach to developing a new organizational culture by separating "the cultural wheat . . . from the cultural chaff" (p. 19), retaining the elements that support future goals, and disposing of those that are no longer appropriate. The objective of the change team should be to promote the development of a transformational culture with shared values while allowing for some individual pursuit of goals and objectives (Bass & Avolio, 1993). Bass and Avolio suggested that a leader can facilitate the cultural transition by conducting joint

celebrations that honour the shared norms and values of the merged organization and respectfully celebrating the passage of the old cultural norms that will not transcend into the new business. Greenberg et al. (1996), in citing a study that Rentsch conducted, claimed that “people who interact with one another on a regular basis come to perceive key aspects of their working world in similar terms, . . . a key ingredient in organizational culture” (p. 501). The collaborative discussions in the meetings of the change management team will themselves contribute to the merged culture.

Steps to Address Change Management Processes

The change management process is an area to which an integrated work team could materially contribute. Conversely, if the team does not follow evidence-based best practices in executing change, it could harm the initiative regardless of any theoretical merit. To facilitate the success of the change management, the team should have an appointed change expert who should vet and contribute to all of the key documents and steer the process that introduce changes into the workplace. To maximize the success of the change initiative and to increase the consistency of staff skills, the full change management team should be afforded educational opportunities to remain abreast of the most contemporary evidence on change management practices.

Steps to Address Leadership Considerations

The findings of this study suggest that the leadership of the organization during the integration of Fire and EMS is equally important to the process of change management and therefore requires a high level of attention. The first task for the HES leader is to create, with the assistance of recruiting experts, competency profiles for the required change agent leaders. With that profile complete, an inventory of the existing

staff should be conducted for suitability for appointment to the task or to receive training to acquire the necessary competencies. If there are senior staff who are passionate about the vision but do not possess all of the leadership competencies, there should be an analysis to consider providing the training and coaching support to narrow the competency gap. Ashkenas & Francis (2001) support this approach as contributing to organizational loyalty in an effort to keep key staff with essential reference knowledge from leaving. If some of the positions cannot be filled by internal candidates, then HES should recruit externally. Hiring from outside may mean having to maintain a delicate balance to secure overall support. One consideration to maintain support from influential partners is to provide them with an opportunity for input into the selection process.

Farkas and Wetlaufer (1998) and Kotter (1996, 1998) highlighted the importance of finding the best candidates to champion organizational change and making the time committed to identifying the most qualified leaders with the requisite attributes and skills worthy of the effort. Failure to dedicate the appropriate focus to this task could result in an ineffective leader's being assigned to the project and the complete collapse of the initiative, which will leave the organization more strained than before.

Steps to Address Dominance by One Discipline

To address the issue of one service dominating the other, an organizational commitment to an unbiased approach is essential, and this needs to radiate from all of the actions of the senior staff members who provide that leadership. A participant from one of the case study sites commented on the importance of an equitable approach: Any demonstrated preference for one discipline over the other would have immediate and sustained impacts on the trust and integrity of the process. Bleeke and Ernst (2002b)

supported this finding: “In an unfair alliance, both partners typically fail” (p. 190). McCallion (2005) discussed a large EMS agency in the US where such inequities are alleged to exist in pay and benefits and reported that it has resulted in strained relations between Fire and EMS and issues with staff retention. To ensure that an unbiased approach becomes the business practice and the cultural norm within the organization, the most senior staff involved could challenge the change management team, as one of its first assignments, to create a decision-making template that supports the value of equity between disciplines. Then any HES initiative can be benchmarked against this template. There may be occasions when an inequitable approach is appropriate; however, if that occurs, it will be important to ensure broad communication with everyone who may be affected to explain the rationale and that it is an isolated circumstance.

If the organization does not frame the integration as a merger and partnership, HES should expect to face all of the challenges that arise from an acquisition. Aiello and Watkins (2001) concluded that the success rate of forced acquisitions is notably low. Leading an organization through an acquisition will result in additional conflict if it is the chosen path it will require many highly skilled and dedicated resources to implement change in the face of resistance.

Steps to Address Funding

The broader funding obstacle has been the subject of an extensive discussion between municipal and provincial governments. Complementary to this action research, the project sponsor, Glen Peace, CAO, who represents the major municipalities across the province on Emergency Services (Police, Fire, and Ambulance), presented a discussion paper to the MOHLTC to champion an enhanced provincial funding grant for all

municipalities and to establish more flexibility in the application of the land ambulance funds from the province. The task for the Hamilton change management team will be to align itself with a larger municipal representative body and propose tangible solutions to the province. If a new funding formula is not achieved, it limits the options for further Fire and EMS integration and constrains other partnerships or initiatives that could maximize the flexibility efficiency of providing an EMS response.

Steps to Address a Centralised Ambulance Communications Centre (CACCC)

The ambulance dispatch service has been characterised in this study as a disadvantage primarily because its governance is under the direct authority of another level of government, notably the province. To optimise the effectiveness and efficiencies of a fire-medical model, the dispatching of fire-medics should be controlled at one point of contact. It is possible that the dispatch functions could remain under the current governance structure and use two sets of radio infrastructure; however, it would be cumbersome. The integration working group would need to make it a priority task to review various models of ambulance dispatch governance that may include a strategic alliance of neighbouring municipalities to plan for change. This type of work was conducted in 2000 in Hamilton, which may foster prompt and informed response to any such invitation.

The challenge to assuming ambulance dispatch functions into an integrated Fire, EMS, and Police model may be to some extent similar to the issues with the current governance model. The improvement will be that the municipality will supply the service to another municipal department; however, it will not necessarily be EMS that controls EMS resources. EMS dispatching differs from police and fire service, and some case

study participants noted that there are differing deployment models. These variances will have to be cautiously considered in any new model. In a review of the NY City Fire and EMS merger, Weiss (1998) reported that changing the fluid deployment of EMS to the fire-station-based model “has a devastating effect. . . . Response times went up immediately” (¶ 1). The city decided to return to the on-the-street staging, and “within a month, response times dropped two minutes” (Impact and Problems section, ¶ 1). Williams (1995) made a similar observation on the different methods of deployment and suggested that it is a source of conflict between the services that requires consideration for a collaborative solution.

Steps to Address Entry-Level Paramedics and Firefighters

The findings from the case study sites and the Hamilton focus groups clearly point to the importance of equity between the disciplines of Fire and EMS for a successful integration initiative. Weiss (1998) also supported treating specifically the disciplines of Fire and EMS equitably in integration, and Bleeke and Ernst (2002a & b) similarly advocated equitable treatment more generically in organizational mergers. Currently, it takes two academic years to become an entry-level paramedic and approximately 12 weeks to become a firefighter. Providing equal opportunity to firefighters requires that they be dual trained, which means a two-year paramedic course. If the current entry-level requirements for a paramedic remain in place, it will be challenging for any municipality to financially reconcile training firefighters to become paramedics. A compromise for all parties may be to require that new staff already possess entry-level EMS training, a model that is in place in Winnipeg, Phoenix, and Red Deer (Haley, 2004; Ostrow, 1996; Pendergast, 2003, respectively). To make this suggestion even more palatable, the change

management work group may benefit from reviewing the merits of requiring two academic years of training for entry-level paramedics. Other provinces, including Alberta and British Columbia, have less stringent entry-level programs. With EMS being downloaded to the municipalities, one of the fundamental concepts of municipal government, according to Tindal and Tindal (2000), is that “services are provided in accordance with the needs and wishes of the local residents” (p. 4). This basic principle of governance should inform this issue and the funding obstacles.

Summary

HES should begin by determining its internal appetite for change and then consider the various recommendations and the suggested steps to achieve the objectives. Consistent with the theme of this project as action research, HES must continuously evaluate its circumstances, consider the evolving opportunities, and be poised to monopolize on them, a process that Hussey and Hussey (1997) described as a cycle of planning, acting, observing, and reflecting. I suggest that Steps 1 to 3 can be achieved in a few months; however, Step 4 may be extended over a minimum of five years to effectively address the obstacles and maximize the opportunities.

Future Research

The activity of this research project and the results of this study have the potential to be an important contribution to the evolution of HES; however, it is only the beginning of the discipline analysis that HES should continue.

The study was intended to determine the current feasibility of advancing integration based on the general environment as described. The results and recommendations are therefore limited to those conditions that remain static. If there is a

material change in the environment, further disciplined analysis should be conducted.

Recommendation 4 states that the consideration of further integration should be

“continuously informed and adjusted based on disciplined analysis.”

This study identified some of the experiences of other sites and balanced those findings with the perceptions and the will of the Hamilton participants. The primary question was about the perceptions of the feasibility of integration. There was no rigorous financial assessment of any one model. If a community decides that it wants to proceed with further integration, it would be reasonable to conduct a detailed efficiency and effectiveness analysis.

This project identified the factors that are important to integration. However, it 14 of 20 case study participants and the Hamilton focus groups contended that the level of integration is case specific. The general list of issues is not exhaustive, and the rank order may differ in other environments. For example, if the initiative is limited to a strategic alliance that integrates only administration rather than extended to an acquisition with full operational integration, the magnitude of the advantages, disadvantages, opportunities, and obstacles will likely vary. Even if the level of integration is the same, but the size of the workforce is materially different—for example, 10 frontline staff instead of a 1,000-member workforce—it is likely that the findings and the recommendations would differ. Whereas with this project I set out to identify the level of integration that is feasible in Hamilton based on the existing conditions, I did not explore virtually every model possible. The project may assist other communities that are considering integration in developing an evaluation process to consider what can be practically implemented with the necessary general stakeholder acceptance and the material obstacles removed. With

greater clarity of the level of integration that is feasible, the organization can then proceed to more specifically consider the potential advantages, disadvantages, obstacles to, and opportunities for their preferred model(s).

The main research question in this major project was, *What level of Fire and EMS integration is feasible in Hamilton?* for the purpose of considering change. Other like municipalities may derive benefit from reviewing and considering the results; however, they must first profile the desire for change in their own communities. Regardless of how legitimate proposed changes may be, the general acceptance of any change by the given culture is likely to be an important factor, and this project did not quantify that for other jurisdictions.

This study is the foundation for further Fire and EMS integration evaluations within Hamilton, and it can assist other municipalities as a template to consider for their own evaluation. The topic will continue to be of interest as long as fire-suppression activities diminish based on the excellent results of fire prevention while EMS demands increase based on the aging population and other similar factors. Finding new methods to meet community needs is an ongoing project, and this is the first step in a disciplined, ongoing, interactive assessment process.

CHAPTER SIX – LESSONS LEARNED

This project has been a continuous learning opportunity, beginning with developing it, then conducting the study, and, finally, constructing the written report.

The primary lesson that I have learned that was continuously reinforced was the importance of placing place the needs of those who assisted me directly or indirectly ahead of any other perceived priorities of my own or of the project itself to gain and maintain support. The first example was the change in my project supervisor after I had started the project. Although I could have continued with my first project supervisor, it would have created labour difficulties for the sponsor organisation because of an unforeseen issue that arose in the supervisor's relationship with the city. I was able to negotiate a respectful change that met the needs of all concerned. For a protracted period of time this event hindered my starting the project, but by addressing the needs of my organisation, I have been able to maintain its full support throughout the past two years. The compromise yielded constructive long-term results.

The second example related to obtaining the support of the study participants. I was able to find participants who expressed initial interest in the project and the advisory group; however, securing the actual support was difficult. Offering the opportunity to contribute to local change and to the literature on the subject was itself not compelling enough for the majority to give of their time. Many participants were interested and focused on how the project would directly benefit them or who they might be representing. In addition, providing reassurances of individual confidentiality without constraining the reporting of the findings turned out to be a greater task than anticipated,

again primarily because of individual needs and interests. Further, once I was successful in convincing various participants that they would not be personally harmed by the project, many continued the dialogue to seek assurances that their profession or organisation would not be harmed and to determine, ideally, how their circumstances could be assisted. Although it was not possible to offer complete personal and professional organizational immunity, I focused on the needs of the participant, balanced against any reduction in the integrity of the project.

To complete the project I had to compromise on some of my project ambitions. One location that I wanted to visit that had particular value was initially uncooperative. All of the potential participants allegedly had been harmed by some past integration efforts, to the extent that none of them were willing to discuss the issue. There may have been another means to gather information, but not in the format that I had designed. This potentially limited my samples; however, in discussion with my project advisors, I decided that including that site might create harm, which is contrary to the principles of action research and the values of my project. I recruited participants from another recruited with a similar history, although they too were initially reluctant because of harm that past researchers had caused.

After a few months I focused on building trust at a strategic juncture, and I was able to respectfully acquire their support and get started on the project. However, this represented another delay, which was necessary. It is apparent that with applied research that relies on participants, their support is essential, and the researcher must accept the limitations and build flexibility into the research plan that includes scoping out the timelines and the complexity of the task. Although I had a theoretical timeline in which to

complete the project, I had to continuously adjust it. First, in action research there is a significant reliance on the availability and contributions of the others. Second, I was trying to complete this project and continue to be productive in my job, which consumes much more than a typical full-time position, and I constantly found myself behind schedule. I had envisioned conducting larger focus groups in Hamilton, but, although I was able to get sufficient input, my groups were smaller than anticipated. Even then, scheduling everyone into the same room on more than one occasion was problematic. Although I am pleased with the comprehensiveness of the product, I should probably have constrained the scope of the work. In addition to reinforcing the need to be flexible as an applied researcher, I realized that researchers must limit the scope of the question that they are seeking to answer in one project.

Notwithstanding the noted obstacles, many other challenges interfered with my focus on completing this project. Where possible, I turned the obstacles into opportunities. For a period of a year, I was placed into a senior acting position because of the sudden departure of my immediate work supervisor, and I was assisting with two other positions. These events alone would be problematic to manage; however, they were exacerbated by my position in the organization in championing change and being the lead researcher for this project. Effectively leading change, as leading authors such as Murray and Richardson (2003) and Yukl (2002) cautioned, consumes a significant amount of a leader's time. This one factor alone is a struggle for anyone in like circumstances. This fell on the heels of my mother's undergoing two amputations, overlaid with having a new child and moving house. All of these priorities cumulatively siphoned my capacity to complete the project promptly, although it added richness to the outcome. Extending the

time of my involvement helped HES to continue to apply a more disciplined approach to answering the question. My personal observation has been that the action research process has elevated the decision-making processes. Disciplined thought is becoming part of the HES living culture and continual reflection and transformation, which is consistent with the intention of action research, as Stringer (1999) proposed.

Building on the principle of continued evaluation, Stringer (1999) suggested that an intended outcome of action research is positive influence on the community by engaging them in the research process. To assess whether the engagement of the community affected the organization, I reinterviewed six key participants from the Hamilton focus groups, one from each group, with management and labour representation. I conducted the reinterview one year after the first focus group. The general support for further integration was unchanged. Whereas the participants agreed that the basic positions had not changed, four of the six participants cited examples of how the integration environment in Hamilton had improved. They noted that (a) relations between firefighters and paramedics were healthier, (b) there had been some minor positive adjustments to address the issues of equity in areas such as uniform issue and common policies, (c) some cultural gaps were continuing to narrow, and (d) there had been further informal dialogue on integration that was more inclusive than in the past. A more rigorous evaluation would be required to assess whether these changes can be directly attributed to the action research activity, but this does suggest that there is an improved forum for transparent dialogue on the subject matter.

In summary, my involvement in the project matured my practical understanding of the limits of action research and how the researcher might adapt to the circumstances.

There are many variables in action research, with limited controls. Knowing and respecting those limitations in the initial project design and extending the flexibility of the process still allowed me to meet the intended objectives, and ensuring the project's integrity required that as the lead researcher, I continuously reassess the process. The limitations are also the strengths of action research, which can and should be used to promote continuous exploration of the problem and/or opportunity as a part of any organic process.

REFERENCES

- Aiello, R. J., & Watkins, M. D. (2001). The fine art of friendly acquisition. *Harvard Business Review on Mergers and Acquisitions*. Boston: Harvard Business School.
- Ambulance Act. (2000). *General regulation 257/00*. Toronto, ON: Government of Ontario.
- Anders, G. (2002). 7 lessons from WaMuPlaybook. *Fast Company*, 54. Retrieved November 20, 2005, from <http://www.fastcompany.com/magazine/54/chalktalk.html>
- Anthony, R. N., & Young, D. W. (2003). *Management control in nonprofit organizations* (7th ed.). New York: McGraw-Hill Irwin.
- Ashkenas, R. N., & Francis, S. C. (2001). Integration managers: Special leaders for special times. *Harvard Business Review on Mergers and Acquisitions*. Boston: Harvard Business School.
- Ashkenas, R. N., DeMonaco, L. J., & Francis, S. C. (2001). Making the deal real: How GE Capital integrates acquisitions. *Harvard Business Review on Mergers and Acquisitions*. Boston: Harvard Business School.
- Atkinson, S., & Butcher, D. (2003). Trust in managerial relationships. *Journal of Managerial Psychology*, 19(4). Retrieved October 15, 2003, from <http://80-ejournals.ebsco.com.ezproxy.royalroads.ca/Article.asp?ContributionID=4656204>
- Augustine, N. R. (1998). Reshaping an industry: Lockheed Martin's survival story. *Harvard Business Review on Change*. Boston: Harvard Business School.
- Austin, J. E. (2000). *The collaboration challenge: How nonprofits and businesses succeed through strategic alliances*. San Francisco: Jossey-Bass.
- Bass, B. M. (1990). From transactional to transformational leadership: Learning to share the vision. *Organizational Dynamics*, 18(3), 19-31.
- Bass, B. M., & Avolio, B. J. (1993). Transformational leadership and organizational culture. *Public Administration Quarterly*, 17(1), 112-121.
- Belton, G. P., Fortner, C. S., & Spinner, P. (1982). *Organizational review project*. Calgary, AB: City of Calgary Fire Department, Ambulance Division.
- Bleeke, J., & Ernst, D. (2002a). Is your strategic alliance really a sale? *Harvard Business Review on Strategic Alliances*. Boston: Harvard Business School.

- Bleeke, J., & Ernst, D. (2002b). The way to win in cross-border alliances. *Harvard Business Review on Strategic Alliances*. Boston: Harvard Business School.
- Bowditch, J. L., & Buono, A. F. (1994). *Leadership and the manager: A primer on organizational behaviour*. New York: John Wiley & Sons.
- Becknell, J. M. (2001a). Is the fire service really taking over? *Best practices in emergency services*, 4(5), 33-34.
- Becknell, J. M. (2001b). Standards and performance measures. Fire gets assertive on EMS. *Best practices in emergency services*, 4(5), 36-37.
- Becknell, J. M. (2002a). AMR offsets ALS engine costs: Faster response for less. *Best Practices in Emergency Services*, 5(6), 61-62.
- Becknell, J. M. (2002b). How is EMS changing fire station design? *Best Practices in Emergency Services*, 5(8), 85-86.
- Browett, B., & Cossette, D. (1992, December). Fireground heart attacks. *Fire Fighting in Canada*, pp. 6-7.
- Bruegman, R. R. (1997). 21st century: Dead ahead. *Fire Chief*, 41(1), 23-28.
- Bulthuis, C. (2005). [HES EMS and Fire response time performance]. Unpublished raw data.
- Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council of Canada. (2005). *Tri-Council policy statement: Ethical conduct for research involving humans*. Retrieved April 24, 2006, from http://www.pre.ethics.gc.ca/english/pdf/TCPS%20October%202005_E.pdf
- Carey, D. (2001). Lessons from master acquirers. *Harvard Business Review of Mergers and Acquisitions*. Boston: Harvard Business School.
- Cartwright, S., & Cooper, C. L. (1993). The role of culture compatibility in successful organizational marriage. *Academy of Management Executive*, 7, 57-70.
- Chapman, N. (2004). Key success factors in mergers and acquisitions. *Strategic Human Resource Review*, 4(1), 27.
- Chesbrough, H. W., & Teece, D. J. (2002). When is virtual virtuous? Organizing for innovation. *Harvard Business Review on Strategic Alliances*. Boston: Harvard Business School.
- Chesterfield County, Virginia, Board of Supervisors. (2001). *Minutes 03/12/01*. Retrieved July 25, 2003, from <http://chesterfield.gov/boardofsupervisors/mn010312.asp>

- Chief Coroner, Province of Ontario. (2000). *Inquest touching the Death of Joshua Fleuelling: Jury verdict and recommendations: Recommendations 18 & 26*. Toronto, ON: Province of Ontario, Ministry of Solicitor General.
- City of Edmonton, Ambulance Services Steering Committee. (1992). *Review of ambulance service delivery options*. Edmonton, AB: Author.
- City of Hamilton. (2000a). *Hamilton City Council report*. Hamilton, ON: Author.
- City of Hamilton. (2000b). *Hamilton Emergency Medical Services: Transitional implementation plan*. Hamilton, ON: Author.
- City of Hamilton. (2000c). *Vision 2020*. Hamilton, ON: Author.
- City of Hamilton. (2002). *Mission, Vision, Values, and Goals of the City of Hamilton*. Hamilton, ON: Author.
- City of Hamilton. (2004a). *City of Hamilton: Road map to sustainability: A White paper for discussion on objectives and actions 2004-2009*. Hamilton, ON: Author.
- City of Hamilton. (2004b). *Environmental scan, 2004*. Hamilton, ON: Author.
- City of Hamilton. (2004c). *Hamilton Central Ambulance Communication Centre tiered response criteria*. Hamilton, ON: Author.
- City of Hamilton. (2004d). *Hamilton Emergency Services Emergency Medical Services response time data report*. Hamilton, ON: Author.
- City of Hamilton. (2004e). *Human resource inventory report*. Hamilton, ON: Author.
- City of Hamilton. (2004f). *Organizational chart*. Hamilton, ON: Author.
- City of Hamilton. (2005a). *Budget update*. Hamilton, ON: Author.
- City of Hamilton. (2005b). *Hamilton Emergency Services complement report*. Hamilton, ON: Author.
- City of Hamilton. (2005c, November). *Pandemic planning*. Presentation to City of Hamilton staff, Hamilton, ON.
- Clawson, J. G. (2003). *Level three leadership: Getting below the surface* (2nd ed.). Upper Saddle River, NJ: Prentice Hall.
- Clemmer, J. (1995). *Pathways to performance: A guide to transforming yourself, your team, and your organization*. Toronto, ON; Macmillian Canada.
- Collins, J. (2001a). *Good to great: Why some companies make the leap and others don't*. New York: HarperCollins.

- Collins, J. (2001b). Level 5 leadership: The triumph of fierce resolve. *Harvard Business Review*, 68-76.
- Collins, J. C., & Porras, J. I. (1998). Building your company vision. *Harvard Business Review on Change*. Boston: Harvard Business School.
- Corporate Board. (2001). Mergers & acquisitions: For merger integration, faster is better. *Business Source Primer*, 22(129). Retrieved October 28, 2005, from http://web12.epnet.com.ezproxy.royalroads.ca/citation.asp?tb=1&_sid+3F
- Covey, S. R. (2004). *The 8th habit: From effectiveness to greatness*. New York: Free Press.
- Cusipag, M. (1998). Facing the challenges of fire and EMS. *Canadian Fire Chief*, 9-11.
- Davis, R. (2003). Six minutes to live or die: Only strong leaders can overhaul EMS. *USA Today*. Retrieved July 30, 2003, from <http://www.usatoday.com/news/nation/ems-main.htm>
- Deal, T., & Kennedy, A. (1999). *The new corporate cultures: Revitalizing the workplace after downsizing, mergers, and reengineering*. Reading, MA: Perseus Books.
- Druskat V. U., & Wolff, S. B. (2001). Building the emotional intelligence of groups. *Harvard Business Review*, pp. 81-90.
- Duck, J. (1998). Managing change: The art of balancing. *Harvard Business Review on Change*. Boston; Harvard Business School.
- Dunford, R. W. (1992). *Organisational behaviour: An organizational analysis perspective*. Don Mills, ON: Addison-Wesley.
- Earle, R. B. (1998). *Combined service area alternative for the City of Fort Lauderdale: Executive Fire Officer Program*. Fort Lauderdale, FL: National Fire Academy.
- Eccles, R. G., Lanes, K. L., & Wilson, T. C. (2001). Are you paying too much for that acquisition? *Harvard Business Review of Mergers and Acquisitions*. Boston: Harvard Business School.
- Edwards-Winslow, F. (2002). When government works: Collaborating to save lives. *Leader to Leader*, 24, 6-10.
- Ernst & Young Management Consultants. (1996). Review of the metropolitan Toronto ambulance service: Final report, September 1996. Toronto, ON: Author.
- Farkas, C. M., & Wetlaufer, S. (1998). The ways chief executive officers lead. *Harvard Business Review on Leadership*. Boston: Harvard Business School.

- Fiero, J. (1991). *Bringing Austin's EMS system into the 1990s: Executive Fire Officer Program: Applied research project*. Austin, TX: National Fire Academy.
- Fitch, J. J. (2004a). Creating interagency partnerships: When collaboration overcomes competition: EMS system design and politics, design issues, and options. In J. J. Fitch (Ed.), *Prehospital care administration* (2nd ed., pp. 530-535). San Diego: JEMS Communications/Elsevier and KGB Media.
- Fitch, J. J. (2004b). Expecting the best from today's EMS system: EMS system design and politics, system design issues and options. In J. J. Fitch (Ed.), *Prehospital care administration* (2nd ed., pp. 516-526). San Diego: JEMS Communications/Elsevier and KGB Media.
- Fitch, J. J. (2004c). It all starts with leadership: Leadership, motivation, and ethics in EMS. In J. J. Fitch (Ed.), *Prehospital care administration* (2nd ed., pp. 2-8). San Diego: JEMS Communications/Elsevier and KGB Media.
- Fitch, J. J., & Keller, R. A. (2004). EMS lives or dies by response times: Understanding response times and planning resources: Evolving EMS operations. In J. J. Fitch (Ed.), *Prehospital care administration* (2nd ed., pp. 195-198). San Diego: JEMS Communications/Elsevier and KGB Media.
- Fullan, M. (2001). *Leading in a culture of change*. San Francisco: Jossey Bass.
- Galford, R., & Drapeau, A. S. (2003). The enemies of trust. *Harvard Business Review*, 81(2), 88-96.
- Gaull, E. (2000). *Comprehensive risk analysis for the Emergency Response Service Department: Final report*. Winnipeg, MB: City of Winnipeg.
- Glanz, J. (1998). *Action research: An educational leader's guide to school improvement*. Norwood, MA: Christopher-Gordon.
- Goleman, D. (1998). What makes a leader? *Harvard Business Review* (November-December), pp. 93-102.
- Goleman, D. (2000). Leadership that gets results. *Harvard Business Review* (March-April), pp. 78-90.
- Gomes-Casseres, B. (2002). Group vs. group: How alliance networks compete. *Harvard Business Review on Strategic Alliances*. Boston: Harvard Business School.
- Goss, T, Pascale, R., & Athos, A. (1998). The reinvention roller coaster: Risking the present for a powerful future. *Harvard Business Review on Change*. Boston: Harvard Business School.

- Greenburg, J., Baron, R. A., Sales, C. A., & Owen, F. A. (1996). *Behaviour in organizations: Understanding the human side of work* (Canadian ed.). Scarborough, ON: Prentice Hall Canada.
- Haley, J. (2004). Cross training a department. *The Canadian Firefighter and EMS Quarterly* (April), pp. 10-11.
- Hamel, G., Doz, Y. L., & Prahalad, C. K. (2002). Collaborate with your competitors and win. *Harvard Business Review on Strategic Alliances*. Boston: Harvard Business School.
- Hamilton Emergency Services. (2004). *Organizational chart*. Hamilton, ON: Author.
- Heifetz, R. A., & Laurie, D. L. (1998). The work of leadership. *Harvard Business Review on Leadership*, Boston: Harvard Business School.
- Herzlinger R. (1999a). Can public trust in non-profits and governments be restored? *Harvard Business Review on Non-Profits*. Boston: Harvard Business School.
- Herzlinger, R. (1999b). Effective oversight: A guide for non-profit directors. *Harvard Business Review on Non-Profits*. Boston: Harvard Business School.
- Heskett, J. L. (1998). Managing for results in the community for the future. In F. Hesselbein, M. Goldsmith, R. Beckhard, & R. F. Schubert (Eds.), *The community of the future* (pp. 139-153). San Francisco: Jossey-Bass.
- Holbeche, L. (2001). How to handle mergers and acquisitions. *People Management*, 7(22), 56-57.
- Hood, S. (2000). Generational diversity in the workplace. *HR Professional*, 17(3), 19.
- Hospital Emergency Department and Ambulance Effectiveness Working Group. (2005). *Improving access to emergency services: A system commitment* [Submitted to the Honourable George Smitherman]. Toronto, ON: Ontario Ministry of Health and Long-Term Care.
- Huhn, G. E. (1997). *Consolidation of fire and emergency medical services in Palm Coast: Executive Fire Officer Program: Applied research project*. Palm Coast, FL: National Fire Academy.
- Hunt, D. W. (1995). *The City of Edmonton Emergency Response Department: A retrospective review*. Edmonton, AB: City of Edmonton.
- Hussey, J., & Hussey, R. (1997). *Business research: A practical guide for undergraduate and postgraduate students*. London: Macmillan.

- IBI Group. (2000a). *The new City of Hamilton: Potential for integrating fire & land ambulance services*. Hamilton, ON: City of Hamilton.
- IBI Group. (2000b). *Service delivery options for land ambulance operations: Interim report: Regional municipality of Sudbury land ambulance services study*. Sudbury, ON: Author.
- IBI Group. (2001). *EMS organization review*. Hamilton, ON: City of Hamilton.
- Kanter, R. M. (2002). Collaborative advantage: The art of alliances. *Harvard Business Review on Strategic Alliances*. Boston: Harvard Business School.
- KDKA-TV. (2003). *City discusses Fire/EMS merger*. Retrieved July 25, 2003, from http://kdka.com/local/local_story_157151320.html
- Kelman, W. L. (2000). Municipal mergers: The New City of Toronto experience. *Institute of Transportation Engineers Journal*, 70(5), 43-48.
- Kotter, J. P. (1996). *Leading change*. Boston: Harvard Business School Press.
- Kotter, J. P. (1998). What leaders really do. *Harvard Business Review on Leadership*. Boston: Harvard Business School.
- Kouzes, J., & Posner, B. (1997). *The leadership challenge* (2nd ed.). San Francisco: Jossey-Bass.
- KPMG. (1999). *Fire and ambulance services station location and facilities study*. Toronto, ON: Author.
- Krell, E. (2001). Merging corporate cultures. *Training*, 38(5), 68-74. Retrieved October 19, 2003, from http://web1.epnet.com.ezproxy.royalroads.ca/citation.asp?tb=1&_ug=sid+1037AE97%2D376E%2D48DE%2DAB02%2D87CF16707371%40sessionmgr6+db+aph%2Cbuh%2Cbwh%2Cmth%2Cufh+360A&_us=sel+False+frn+1+sl+%2D1+hs+False+or+Date+ss+SO+sm+KS+mdb+aph%2Cbuh%2Cbwh%2Cmth%2Cufh+dstb+KS+mh+1+ri+KAAACBVA00027237+A23C&_uso=%5F0&cf=1&fn=1&rn=1
- Letts, C. W., Ryan, W., & Grossman, A. (1999). Virtuous capital: What foundations can learn from venture capitalists. *Harvard Business Review on Non-Profits*. Boston: Harvard Business School.
- Levick, N. (2002). New frontiers in optimizing ambulance transport safety and crashworthiness. *The Paramedics*, 4(12), 36-39.
- Levine, S. N. (2002). *Fire-EMS merger figures due next week*. Retrieved July 25, 2003, from http://www.polkonline.com/stories/101102/loc_mergeer.shtml

- Linden, R. (2003). The discipline of collaboration. *Leader to Leader*, 29, 41 – 47
- Logan, D. (2002). *Conflict management within the municipal public sector*. Toronto, ON: York University, Osgoode Hall Law School.
- Mackeracher, D. (1998). *Making sense of adult learning*. Toronto, ON: Cultural Concepts.
- Marks, S. (2000). *An analysis of EMS in Ontario: Provision of EMS in Ontario*. Retrieved October 29, 2003, from <http://www.torontofirefighters.org/Mc.html>
- Matheson, D. R., & Sims, A. C. L. (1997). *The City of Edmonton Emergency Response Department: An independent review*. Edmonton, AB: City of Edmonton.
- McCallion, T. (2005). D. C. Fire & EMS: How not to run an agency. *Journal of Emergency Medical Services*, 23(12), 22.
- McGehee, T. (2001). The changing nature of work. *Leader to Leader*, 21, 45-55.
- McGrath, M. (2000). Fire house divided. *Fire Chief* (October), 12-13.
- McHugh, M., & O'Brien, G. (1999). Organizational metamorphosis led by front line staff. *Employee Relations*, 21(6), 556-557.
- McManus, S. (2001). *The critical need for public prehospital care in Canada: Utilizing the efficiencies of a Fire-based EMS system*. Toronto, ON: International Association of Fire Fighters.
- McNamara, M. (1999). *EMS in Ontario: A position paper by Dr. Martin McNamara*. Penetangusihene, ON: Author.
- Ministry of Health, Long-Term Care, Emergency Health Services. (2000). *New operator certification package: Commitment to proper provision of land ambulance services*. Toronto, ON: Author.
- Monosky, K. A. (2003). 200-city survey: JEMS' annual report on EMS operational and clinical trends in the country's 200 most populous cities for 2002 . *Journal of Emergency Medical Services*, 28(2), 36-38, 40, 42-55.
- Morton-Cooper, A. (2000). *Action research in health care*. Malden, MA: Blackwell.
- Murphy, M. (1994). *Report: Emergency health services Nova Scotia*. Halifax, NS: Emergency Health Services.
- Murray, E. J., & Richardson, P. R. (2003). *Fast forward: A new framework for rapid organizational change: Improving the practice of management*. London, ON: Ivey.

- Nanda, A., & Williamson, P. J. (2002). Use joint ventures to ease the pain of restructuring. *Harvard Business Review on Strategic Alliances*. Boston: Harvard Business School.
- Nankervis, A. R, Compton, R. L., McCarthy, T. E. (1996). *Strategic human resource management* (2nd ed.). South Melbourne, Australia: Nelson ITP.
- National Fire Protection Association. (2003). *About us*. Retrieved May 2, 2003, from <http://www.nfpa.org/categoryList.asp?categoryID=143&URL=About%20Us>
- National Fire Protection Association. (2005a). *NFPA 1710 fact sheet*. Retrieved July 21, 2005, from <http://www.1645.org/archive/nfpa%20fact%202002-01-03.PDF>
- National Fire Protection Association. (2005b). *NFPA 1710: A standard for every professional fire department*. Retrieved July 21, 2005, from <http://www.iaff.org/academy/content/online/modules/1710/index.htm>
- National Fire Protection Association. (2005c). *NFPA 1720: Standards for the organization and deployment of fire suppression operations, emergency medical operations and special operations to the public by volunteer fire departments*. Retrieved July 21, 2005, from [http://www.nfpa.org/about the codes/About the Codes.asp?DocNum+1720](http://www.nfpa.org/about%20the%20codes/About%20the%20Codes.asp?DocNum+1720)
- Ontario Labour Relations Board. (2002). *Albertyn, C. J., Vice Chair, File No. 1192-00-R. Ontario Public Services Employees Union, Applicant vs. City of Owen Sound, et al., Responding Parties v. Owen Sound Professional Fire Fighters Association, Local 531*. Toronto, ON: Author.
- Chief Administrative Officers of Ontario. (2004). *Ontario municipal CAOs benchmark initiative*. Retrieved July 16, 2004, from <http://www.ombi.ca/docs/newsinfo.asp?track=vi&itemid=133>
- Ontario Office of the Fire Marshall. (1997). *Fire Protection and Prevention Act: Statutes of Ontario 1997*. Toronto, ON: Author.
- Oshry, B. (1996). *Seeing systems: Unlocking the mysteries of organizational life*. San Francisco: Berrett-Koehler.
- Ostrow, L. S. (1996). What's so great about fire? *Journal of Emergency Medical Services*, 38-43.
- O'Toole, J. (1995). *Leading change: The argument for values-based leadership*. New York: Ballantine Books.
- Palloff, R. M., & Pratt, K. (1999). *Building learning communities in cyberspace. Effective strategies for on-line classroom. Part 1: The learning community in cyberspace*. San Francisco; Jossey-Bass.

- Palys, T. (1997). *Research decisions: Quantitative and qualitative perspectives* (2nd ed.). Toronto, ON: Thomson Canada.
- Peace, G. (1999). *3-year business plan: A plan for the reorganization of the Hamilton Fire Department*. Hamilton, ON: City of Hamilton.
- Peace, G. (2002). *Hamilton Emergency Services: 3-year master plan 2002 to 2004: Report for Hamilton City Council*. Hamilton, ON: City of Hamilton.
- Pendergast, J. (2003). Integration works: The development of an integrated emergency service—Fire and EMS—in Red Deer, Alberta, began more than 40 years ago. *The Canadian Firefighter and EMS Quarterly*, 8-10.
- Pepe, P. (1996). Fire EMS making cents in Houston. *Journal of Emergency Medical Services*, 45-46.
- Phelps, R. (2006). Pandemic planning: Getting ready. *Emergency Management Canada*, 1(1), 24-27.
- Phillips, C., Palfrey, C., & Thomas, P. (1994). *Evaluating health and social care*. London: Macmillan.
- Polgar, S., & Thomas, S. (1998). *Introduction to research in the health sciences* (3rd ed.). London: Churchill Livingstone.
- Rea, L. M., & Parker, R. A. (1997). *Designing and conducting survey research: A comprehensive guide* (2nd ed.). San Francisco, Jossey-Bass.
- Regional Chairs of Ontario. (1995). *In pursuit of better government: The provincial/regional partnership in areas of service responsibility, governance, and financing*. Toronto, ON: Author.
- Richardson, G. R. (1996). *An analysis of fire department and ambulance integration from a process perspective: Utilizing Winnipeg Manitoba as a case study*. Unpublished master's thesis, University of Winnipeg, Winnipeg, MB.
- Robertson, R. (2003). *Current issues: Budget report for 2003 & 2004*. Presented at the Extended Management Team meeting, Burlington, ON.
- Robertson, R., & Ball, B. (2002). Innovation and improvement in the delivery of public services: The use of quality management within local government in Canada. *Public Organisational Review: A Global Journal*, 2, 387-405.
- Royal Roads University. (2004). *Royal Roads University research ethics policy*. Retrieved May 2, 2004, from <http://www.royalroads.ca/Channels/research/ethical+reviews/ethics+policy.htm>

- Ruch, W. (2000). How to keep Gen X employees from becoming X employees. *Training and Development*, 54(4), 40-43).
- Sachs, G. M. (1997a). Developing Fire service/EMS partnership: Is war really necessary? *Fire Engineering*, 150(7). Retrieved July 31, 2003, from http://fe.pennnet.com/articles/article_display.cfm?Section=ARCHI&C=Feat&ARTICLE_ID=59793&KEYWORDS=fire%20service%20Fems%20partnerships%201997&p=25
- Sachs, G. M. (1997b). Expanding EMS: Getting into the transport business. *Fire Engineering*, 150(3). Retrieved July 31, 2003, from http://fe.pennnet.com/Articles/Article_Display.cfm?Section=ARCHI&ARTICLE_ID=59591&VERSION_NUM=1&p=25
- Schaffer, R. H., & Thomson, H. A. (1998). Successful change programs begin with results. *Harvard Business Review on Change*. Boston: Harvard Business School.
- Senge, P. M. (1994). *The fifth discipline field book*. New York: Doubleday.
- Senge, P. M. (1999). *The dance of change: The challenges to sustaining momentum in learning organizations*. New York: Doubleday.
- Slevinski, R. S. (1998). EMS in Florida: Current status, future challenges. *Journal of the Florida Medical Association*, 84(9), 564-571.
- Solomon, R. C., & Flores, F. (2001). *Building trust in business, politics, relationships and life*. London: Oxford University Press.
- Stone, D., Patton, B., & Heen, S. (1999). *Difficult conversations: How to discuss what matters most*. New York: Penguin Books
- Strebel, P. (1998). Why do employees resist change? *Harvard Business Review on Change*. Boston: Harvard Business School.
- Stringer, E. (1999). *Action research* (2nd ed.). London: Sage.
- Tindal, C. R., & Tindal, S. N. (2000). *Local government in Canada* (5th ed.). Scarborough, ON: Nelson Thomson Learning.
- Tridata. (2000). *Comprehensive risk analysis for the Winnipeg Emergency Response Service Department*. Winnipeg, MB: City of Winnipeg.
- Vecchio, R. P. (1995). *Organizational behaviour* (3rd ed.). Fort Worth, TX: Dryden Press.

- Weiss, P. B. (1998). Fire/EMS merger: An examination of cultural differences. *Fire Engineering*, 151(9), 73-80. Retrieved July 31, 2003, from http://weblinks2.epnet.com.ezproxy.royalroads.ca/citation.asp?tb=1&_ua=bt+TD++%22FEN%22+shn+1+db+aphjnh+bo+B%5F+2964&_ug=sid+BF462DF4%2D9EB9%2D46BC%2D8CA2%2DAF98566A8C6C%40sessionmgr2+dbs+aph+6754&_us=hd+False+fcl+Aut+sm+KS+or+Date+frn+1+mdb+aph+sl+%2D1+dstb+KS+sel+False+ri+KAAACB1D00006851+0D31&_uh=btn+N+6C9C&_uso=st%5B0+%2DJN++%22Fire++Engineering%22++and++DT++19980901+tg%5B0+%2D+mdb%5B0+%2Dimh+db%5B0+%2Daph+op%5B0+%2D+hd+False+8D79&cf=1&fn=1&rn=17&
- Wheatley, M. J., & Kellner-Rogers, M. (1998). The paradox and promise of community. In F. Hesselbein, M. Goldsmith, R. Beckhard, & R. F. Schubert (Eds.), *The community of the future* (pp. 9-18). San Francisco: Jossey-Bass.
- Whitely, A. (1995). *What is corporate culture? Managing change: A core values approach*. Melbourne, Australia: Macmillan.
- Williams, B. E. (1995). *Development of a strategy for conflict management during Fire/EMS Department amalgamation: National Fire Academy, Executive Fire Officer Program*. Edmonton, AB: Emergency Response Department.
- Williams, D. M. (2006). 2005 JEMS 200-city survey: A benchmark for the EMS industry. *Journal of Emergency Medical Services*, 31(2), 44-101.
- Wohlitka, C. J. (1999). *An analysis of the consolidation of fire and emergency medical services between the City of Margate, Florida, and the City of Coconut Creek, Florida: Executive Fire Officer Program: Applied research project*. Margate, FL: National Fire Academy.
- Yukl, G. (2002). *Leadership in organizations*. Toronto, ON: Prentice Hall.
- Zikmund, W. G. (1997). *Business research methods* (5th ed.). Orlando, FL: Dryden Press.

APPENDIX A – QUESTIONS FOR SITE INTERVIEW AT CASE STUDIES
AND FOR LOCAL FOCUS GROUPS

1. What would you say are the advantages and/or strengths of Fire and EMS integration based on your experience and knowledge?
2. What would you say are the disadvantages and/or weakness of Fire and EMS integration based on your experience and knowledge?
3. What has been successful and/or created opportunities in your advancement of Fire and EMS integration?
4. What have been the obstacles and/or created threats in your advancement of Fire and EMS integration?
5. What would you do differently if you were start again with Fire and EMS integration?
6. What level of Fire and EMS integration would you recommend for your service and why?
7. What level of Fire and EMS integration would you recommend for others service and why?
8. What impact has fire and EMS integration had on your budget?
9. Do you have any other information you believe to would be helpful to a city considering Fire and EMS integration.

The case study participants and Hamilton focus groups as respondents to the interview questions and focus group discussions were as follows; their responses are shown in Tables 2 to 7:

1. Edmonton Finance
2. Edmonton Labour relations
3. Edmonton Senior staff
4. Edmonton EMS Labour
5. Edmonton Fire Labour
6. Edmonton Fire Admin
7. Edmonton EMS Admin

8. Red Deer Finance
9. Red Deer Labour Relations

10. Red Deer Senior Staff
11. Red Deer Fire and EMS Labour
12. Red Deer City Council

13. Norfolk Finance
14. Norfolk Senior Admin
15. Norfolk Fire and EMS Educator
16. Norfolk Labour Fire and EMS

Hamilton Focus Groups

1. Hamilton Emergency Services, Emergency Medical Services, Management and Labour Representatives
2. Hamilton Emergency Services, Fire, Management and Labour Representatives
3. City of Hamilton, Labour Relations Representatives
4. City of Hamilton, Finance Department Representatives

APPENDIX B – SUMMARY CUMULATIVE FINDINGS OF THE
 LITERATURE REVIEW OF FIRE AND EMS EXPERIENCES;
 STRATEGIC ALLIANCES, MERGERS, AND ACQUISITIONS;
 CASE STUDY SITES; AND HAMILTON FOCUS GROUPS

Y= Emerging Theme
 0 = Not found/observed

Table B1

*Summary Findings of Case Study Participants and Focus Groups: Advantages of Fire
 and EMS Integration*

Case study participants or focus groups citing a particular subcategory	Fire/EMS lit. review	SA, merger, acquisition	Case study site	Hamilton focus groups
Improved efficiencies	Y	Y	Y	Y
Improved effectiveness	Y	Y	Y	Y
Staff benefits	O	O	Y	Y
Strengthened business identity	O	Y	O	O

Table B2

*Summary Findings of Case Study Participants and Focus Groups: Disadvantages**(Weaknesses) of Fire and EMS Integration*

Case study participants or focus groups citing a particular subcategory	Fire/EMS lit. review	SA, merger, acquisition	Case study site	Hamilton focus groups
Operational issues	O	O	Y	Y
Training demands	O	O	Y	O
Recruitment/retention	O	O	Y	Y
Ineffective	O	O	Y	O
Increase conflicts	O	Y	O	O
New time demands	O	Y	O	O
Loss of independence	O	Y	O	O

Table B3

*Summary Findings of Case Study Participants and Focus Groups: Obstacles to Fire and**EMS Integration*

Case study participants or focus groups citing a particular subcategory	Fire/EMS lit. review	SA, merger, acquisition	Case study site	Hamilton focus groups
Labour	Y	Y	Y	Y
Culture	Y	Y	Y	Y
Change management	O	Y	Y	Y
Leadership	Y	Y	Y	Y
Dominate discipline	Y	Y	Y	Y
Limited time to consider business opportunity	O	Y	O	O

Table B4

Summary Findings of Case Study Participants or Focus Groups: Opportunities With Fire and EMS Integration

Case study participants or focus groups citing a particular subcategory	Fire/EMS lit. review	SA, merger, acquisition	Case study site	Hamilton focus groups
Leadership	Y	Y	Y	Y
Change management	O	Y	Y	Y
Labour	O	Y	Y	0
Staffing	O	O	Y	0
Operations	O	O	Y	0