Interoperable Emergency First Response in Ottawa

By

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For Greta: I promise I’ll clean up my corner now. —Bunny
Abstract

This action research project investigated the level to which emergency first responders (E1Rs) and their agencies within the City of Ottawa engage in interoperability and collaboration. The research sought to learn what frontline E1Rs can offer about key on-the-ground considerations for needing and achieving multiagency collaboration within an urban setting. The participants consisted of current operational E1Rs across the 3 emergency response services: the Ottawa Police Service (OPS), Ottawa Fire Service (OFS) and Ottawa Paramedic Service (OPaS). The conclusions identify several factors that inhibit interoperability and collaboration, including agency-specific standard operating procedures (SOPs), the operation within silos, the type or lack of training, leadership, communications, and politics and culture within and across the agencies. Recommendations suggest the establishment of intra-agency working groups to address each issue and identify common ground between agencies that can foster positive relationships prompting necessary paradigm shifts amongst all levels of E1R agencies.
Acknowledgments

Enrolling in a master’s program was not even on my radar two plus years ago when I started to think about retiring. I knew that I was very lucky; I could retire with a very young age and pursue other challenges. Thus, I set to seeking input from my network and acknowledge the contribution of a friend and mentor, Mr. Gino Arcaro. A former Niagara Regional Police officer and former Dean of Niagara College, Police and Public Safety Institute, he encouraged me to augment my education, and I found the Royal Roads University MADEM program.

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Chapter 1: Motivation and Surrounding

I chose the topic of frontline emergency services interoperability for this project as a result of the time that I spent as a police officer in Ottawa, a major urban Canadian municipality. I enrolled with the police department as a young, keen adult, looking to make a difference. I joined to be a patrol officer, and I am proud to say that I retired in the same capacity. When someone called 911, I responded to that call for help and did what I could to alleviate the problem. My priorities throughout my career have been to promote safety and security in the communities in which I have served.

Ottawa is the capital of Canada, with a population of approximately 900,000. It is comprised of both urban and rural settings, with significant suburban neighbourhoods. With an area of 2,779 km$^2$, it is the second largest city in the province of Ontario and the fourth largest city in Canada (“Ottawa,” 2012). From the late 1970s through to the late 1990s, the expansion of Ottawa was tremendous, in part due to the arrival of the high-tech industry, ultimately resulting in the amalgamation of the original city with surrounding areas and their respective administrations in 2000. This included the blending of fire services and the downloading of paramedic services to the city from the provincial government. Amalgamation of the area’s police services, however, had taken place 5 years beforehand.

The activities and problems that go with such expansion and amalgamation followed, and the growing pains continue. As the seat of federal government, with a continuing presence in the high-tech world, and with the dawning of social and entertainment entities the likes of which had not previously been seen (e.g., the Ottawa Senators Hockey Club of the National Hockey League), Ottawa now rightfully took its place among major North American centres. In so doing, Ottawa possesses all of the ingredients for a major emergency or disaster. Chief among these is
the fact that, as the capital of Canada, the city is “rich in targets that could attract a potential terrorist attack” (Bordeleau, 2011, p. 1). Like most North American and western communities, Ottawa has changed drastically since 9/11 and, as Canada has been identified as the only NATO coalition country that has not yet been targeted for a terrorist attack by the Al-Qaeda, a wide belief has resulted that it is not “if” such an attack will happen in Ottawa, but “when.” Ottawa will then require the rapid, coordinated, and combined response of frontline emergency first responders (E1Rs).

Terrorism is hardly the only catalyst dictating a need for interoperability among E1Rs. After-action reports, written by various responders to events that have already taken place, have indicated a number of areas where more efficient response could have been enacted. These events include the partial collapse of a retaining barrier at Frank Clair Stadium during an annual intrauniversity football game between the University of Ottawa Gee-Gees and the Carleton Ravens in 1987; a mass shooting at the headquarters for OC Transpo, the municipal transit system in 1998; and the collapse of the Bluesfest main stage at Lebreton Flats in 2011.

In addition, there are the potential disasters and emergencies to which any community is subject. In May 2012, an Emirates Airlines Airbus A-380 aircraft, the largest passenger aircraft in the world, flying from Dubai to Toronto, ran low on fuel waiting for a storm to pass and made an emergency landing in Ottawa (S/Sgt. S. Brabazon, personal communication, June 14, 2012).

Further, Ottawa sits on a major, albeit largely dormant, faultline, which has produced several earthquakes of significant magnitude in recent memory (“Ottawa,” 2012). Although none of these quakes caused much damage or injury, the potential for a natural disaster is always present.
Few Ottawa residents are aware of a threat to which they are exposed daily—hazardous material traffic on Highway 417. As part of the Trans-Canada Highway system, Highway 417 runs through the middle of urban Ottawa via The Queensway. Approximately 200 km west of Ottawa, located on Highway 17, is the community of Chalk River, and 20 km before that is the city of Petawawa and the Canadian Forces Base (CFB) Petawawa.

Chalk River is the home of Atomic Energy of Canada Limited, which is responsible for the construction of parts for nuclear reactors and over half of the world’s medical isotopes (Van Hoof, 2005). At 300 km², CFB Petawawa is one of Canada’s largest military establishments (Department of National Defence, 2011). The closest port for the importation, exportation, and distribution of supplies required to support both the nuclear and military industries of these communities is Montreal, Quebec. Although both communities are located on the Ottawa River, it is nonnavigable, dictating dependence on the highway to supply daily needs.

Such nuclear and military traffic traverses Ottawa, via the Queensway, constantly. Should any truck carrying hazardous or explosive materials become involved in a major accident at speeds often encountered on a superhighway, it is conceivable that the effect would be similar to what took place in Mississauga on November 10, 1979: Canadian Pacific Railway train 54 was hauling 106 cars—including 80 tonnes of chlorine and other hazardous chemicals—when it derailed at 80 km/h. The resulting explosions threw the entire city of Mississauga into chaos, forcing its complete evacuation along with small pockets of nearby communities, in some areas lasting for as long as 6 days (Funston, 1989).

The risks to Ottawa are significant, and the emergency-related agencies that serve it as a vital component of the overall emergency management must examine their state of emergency preparedness and readiness. At the frontline emergency response level, this examination should
include the notions of interoperability and collaborative relationships between the agencies, as well as the revision of any procedures and policies that may support or subvert such cooperation.

**The Prospect and Its Implication**

Emergencies, disasters, and crises continue to occur with ever more complexity. Emergency response, by its very nature multipronged, is arguably the most complex of the four pillars of disaster and emergency management (DEM; Coppola, 2011). A variety of agencies, stakeholders, and even victims enact response. This dictates that conceived strategies must be designed, coordinated, and efficiently established to the highest possible degree in order to increase “disaster response capacity” (Coppola, 2011, p. 644). Thus, interoperability between frontline E1Rs and their agencies is critical to the overall support of and effectiveness of DEM.

Disaster and emergency managers must plan for and establish processes and protocols to prepare for, mitigate, and recover from whatever event may befall them. Regardless of the event and the successes of the other pillars, response will always be required and will always take place. Thus, if the four pillars are to be successful, a robust response protocol at the occurrence of the event, where processes and procedures are universally accepted and understood, must exist, or all other processes may be rendered virtually useless.

As a result of having spent a number of years on the front lines, and having experienced the difficulties associated with multiagency emergency first response, I have framed my research around the lessons that can be learned from the frontline E1Rs themselves. Although significant research has been conducted into organizational interoperability at the executive and upper management levels, little, if any, has examined the perspective of the frontline E1Rs. Therefore, my research question is, “What can be learned from frontline emergency first responders about
key on-the-ground considerations for needing and achieving multiagency collaboration within an urban setting?”

A series of subquestions were derived from the overall research question:

1. What are the criteria that define a major emergency requiring collaboration?
2. What aspects of a combined response in a municipal emergency or disaster require collaboration?
3. What are the lessons learned and best practices regarding collaboration during a multijurisdictional response in a municipal emergency or disaster situation?

Within complex urban settings, E1R service boundaries are constantly blurred or crossed, and the events that dictate such responses recognize no such boundaries. E1R agencies, by their mandates, respond to situations, emergencies, disasters, and crises, often all at the same time (Donahue, 2006; Hines, 2006; Taber, Plumb, & Jolemore, 2008). Especially in more serious scenarios in larger jurisdictions, where the risks to lives, property, and recovery are elevated, these agencies must learn to work together (Baron Ausbrooks, Barrett, & Martinez-Cosio, 2007; Donahue, 2006). To do so, traditional silos must be broken down. Municipalities, and indeed individual agencies, understand the need to interoperate. However, few have sufficiently organized themselves along such lines, despite their necessity for effective emergency response.

Interoperability between frontline E1Rs has been a functional necessity for several decades. The aftermath of the events of 9/11 brought this issue to the forefront, when New York City Police Department helicopter pilots, circling the twin towers of the World Trade Center, warned of at least one’s imminent collapse (Cohen, Eimicke, & Horan, 2002; Kapucu, 2006; Torres, n.d.). The New York City Fire Department did not receive the information, which consequently contributed to the deaths of 343 of its personnel, among others. King’s Cross St.
Pancras Underground Station, in London, England, was the scene of a fatal fire in November 1987, where 31 people lost their lives (“King’s Cross Fire,” 2007), partly due to a lack of interoperability between the British Transport Police and the London Fire Brigade (Fennell, 1988). Blame for this and other scenarios where inappropriate or unorganized response has resulted in increased mortality and injury, property damage, and inordinately prolonged recovery (Baron Ausbrooks, Barrett, & Martinez-Cosio, 2007; Berlin & Carlström, 2008; Cohen et al., 2002; Kapucu, 2006, 2007; Torres, n.d) has been attributed towards a lack or an ignorance of interoperability.

It is only when robust interoperability concepts, processes, and policies are instituted within and across response agencies that technological advances to enhancing interoperability can be used. Only then can responders prevent situations such as those identified, where a lack of interoperability was blamed for so much loss.

**Analysis of the Prospect**

Analysis of a prospect such as E1R interoperability dictates that a broad perspective be used. It is insufficient to say that one frontline E1R service is more important than another is. All have vitally important, yet mutually exclusive, roles that collectively support the successful resolution of any given scenario. This is not a paper about what needs to be done at any given scenario. E1Rs are consummate professionals, each with an incredible amount of initial and ongoing training. They know what needs to be done. What I have asked here is how they can work together to achieve what they know needs to be done, given specific responsibilities and mandates. As a result, I employed a systems thinking approach during this research.

Systems thinking has been described as “making reliable inferences about behaviour by developing an increasingly deep understanding of underlying structure” (Richmond, 1994, p. 6).
It has been further described as helping people “view systems from a broad perspective that includes seeing overall structures, patterns and cycles” (Authenticity Consulting, n.d., p. 405). This allows an outsider to identify and understand the issues within organizations and as a result, when necessary, be able to address them.

E1R agencies have been around for a long time, and in order to understand the cultures that have developed around them, it is necessary first to understand their individual histories, including when, where, why, and how they were developed in the first place. Over time these dynamics have played a critical role in the evolution of the agencies and how they ultimately developed their standard operating procedures (SOPs). Some SOPs have caused some of the disconnect that exists between frontline E1Rs. Addressing these issues is essential in order to break down traditional silos under which the organizations have historically operated.

**A Brief History of Emergency First Response Agencies: Police, Fire, Ambulance**

The genesis of policing is a topic of debate. There are many examples of policing throughout history. Indeed, there is no reason to believe, either through historical fact or theory, that some form of policing has never existed (Forcese, 1999). Having been known to have existed from Ancient China and Rome, through to Medieval Europe and the Norman Invasion of England (Police, 2013), policing stemmed from the earliest establishment of militaries, king’s men, sheriffs, or representatives under the control of royalty or nobility (Forcese, 1999). The modern police service is widely considered the invention of Sir Robert Peel, who introduced the Metropolitan Police Act into Parliament, which founded the Metropolitan Police in London, England, in 1829 (“Metropolitan Police,” 2013). Due to their development out of military organizations, police forces developed as hierarchal organizations, with distinct rank structures and chains of command. To this day, policing is widely recognized as a paramilitary entity.
The history of fire departments is more recognizably attributed to Roman times (“History of Firefighting,” 2013). While not originally an emergency response service per se, the brigade created by Marcus Licinius Crassus (b. circa 115 BC) did respond to fires at the behest of their boss. Once upon the scene, Crassus would negotiate a price for the services of his brigade in order to rescue whatever edifice might be burning. Should a settled upon price remain elusive, the building simply burned to the ground, at which time Crassus would offer a fraction of the previous value for the property (“History of Firefighting,” 2013). Towards 6 AD, Augustus Caesar built upon Crassus’s idea and introduced tools such as pumps, poles, hooks, and ballistae, which allowed the tearing down of buildings in advance of the flames. Hundreds of men would patrol the streets of Rome looking for fires and other trouble, and once they had located it, they would line up to the nearest water source and pass buckets by hand, what was later known as “bucket brigades” (“History of Firefighting,” 2013).

While nowhere near as ancient as the first known fire brigades, ambulances and their attendants date back further than the modern police force. The word *ambulance* comes from the Latin *ambulare*, which means to move about or walk (“Ambulance,” 2012). The first recorded use of an ambulance for emergency response is in Spain in 1487, though paramedic care dates back to Roman times, where aged centurions who could no longer fight were tasked with removing wounded from the battlefield and caring for them behind the front lines. As a result of having to engage in such activities as suturing wounds and perhaps completing amputations, they became de facto surgeons, albeit without formal training (“Ambulance,” 2012). What is now known as the St. John Ambulance Service evolved from the Knights Hospitallers of the Order of St. John of Jerusalem during the Crusades (“Ambulance,” 2012). These knights performed many tasks similar to those of the Roman centurions.
Throughout history, civilian communities were able to organize themselves in order to deal with the sick and dying, in situations such as the bubonic plague. These loose organizations were initially temporary, but ultimately became more formalized and permanent (“Ambulance,” 2012). Subsequent to the American Civil War, where the first instances of triaging were recognized in the use of field hospitals, such practices were adopted by veterans returning to their local communities. Such mobile lifesaving squads became the initial ambulance corps.

Adopted at the local level, such services were then formalized and offered by a wide variety of providers, from hospitals to police and fire services. Funeral directors were often ambulance operators as well, because they could provide a measure of transport where a patient could actually lie down. The continued formalization of this vital service has ultimately resulted in increased training, education, and certification.

Chapter Summary

In Chapter 1, I detailed the focus and framing of this research project. My ultimate goal for this research was to create awareness of the need for interoperability between frontline E1Rs as well as within the management structures of the agencies in which they work. As in any major metropolitan area, Ottawa and its E1R agencies face many risks and dangers. As a national capital, these dangers may cause the city and its residents to suffer significant immediate and lingering effects that would forever change its makeup. As such, the Ottawa Police Service (OPS), Ottawa Fire Service (OFS), and Ottawa Paramedic Service (OPaS) have a duty to engage in behaviours and procedures that make the best possible use of their individual training and equipment, as well as the combined knowledge and capabilities contained therein.

A number of conclusions and recommendations have arisen out of this major research project. These will serve to guide and assist not only frontline E1Rs, but also their agencies and
the public they serve. They will also serve as a potential template for similarly sized municipalities that face the same potential risks and dangers
Chapter 2: Literature Review

The Need for Interoperability

Disasters and significant emergencies, by their natures and definitions, are events that push individuals, communities, and often nations to their breaking points (Coppola, 2011; Kapucu, 2007). A consistent theme in the DEM literature is the need for interoperability as an overall concept and within frontline E1R agencies specifically (Berlin & Carlström, 2008; Bullard et al., 2008; Kapucu, 2006, 2007, 2008; Palm & Ramsell, 2007). Without measures of interoperability, individuals, communities, and nations would fare far worse in the response to and recovery from such disasters and emergencies. Indeed, interoperability is seen as a way of the future in that it can break down outdated institutional models (Berlin & Carlström, 2008). The effectiveness of emergency response operations is significantly increased in instances where different organizations have previously interacted (Kapucu, 2008). In his 2006 article in the American Review of Public Administration, Kapucu boldly stated that “emergency management requires [italics added] multiorganizational communication and coordination” (p. 221).

Interoperability is not a simple concept. It is not as easy as flicking a switch and everyone communicates and collaborates with one another. The first thing to understand is that it has many variables. Simply possessing the technological capacity to interoperate does not mean that people do. Indeed, as stated by John Saunders, president of the International Association of Emergency Managers (Canada), “If you have two people who do not want to talk to each other, the best radio system in the world cannot fix that” (personal communication, November 14, 2012).

Many challenges exist due to the lack of interoperability; without a doubt the most significant is communication (Manoj & Hubenko Baker, 2007). Indeed, the term interoperability is usually used to refer to technical communication issues, and an abundance of literature is
dedicated to this topic (Boyd, 2005; Brito, 2007; Department of Homeland Security [DHS], 2013; Engebretson, 2007; Hawkins, 2007; Jenkins, 2006; Public Safety Canada, 2012; William, 2006).

Due to their centrality in major disasters—including the 1993 and 2001 attacks on the World Trade Center in New York City; Hurricanes Andrew, Rita, and Katrina; and the 1970 California wildfires that spawned the creation of the Incident Command System (ICS)—communications capabilities have become the predominant aspect of interoperability (Brito, 2007; Federal Emergency Management Agency, 2013; Lutz & Lindell, 2008). However, communication is just one aspect of interoperability that can even compound its lacking through the potential destruction of hardware and software capabilities, such as towers, lines, and signals, in a significant emergency or disaster. This is especially significant if there is a rapid deployment of numerous agencies requiring such capabilities.

Further, with the advent of digitally broadcast television signals, analogue bandwidth has become available within the 700 MHz band for additional communications capabilities (Government Accountability Office [GAO], 2004, 2007). This has resulted in significant movements to lobby governments in the United States of America and Canada to dedicate a portion of this newly available bandwidth to interoperable communications among E1R agencies (Engebretson, 2007; Faulhaber, 2007; GAO, 2004, 2007). The governments within whose borders the signals originate own the airwaves, which are a valuable resource for them (DHS, 2012; Jenkins, 2006; Public Safety Canada, 2012). As a result, the allure of selling said bandwidth to the highest bidder is a strong one, against which lobbyists are fighting in order to secure sufficient technological resources for E1R needs specifically and DEM in general.
Despite the centrality of communication to the overall issue of interoperability, the challenges also include those of a sociological and organizational nature. Manoj and Hubenko Baker (2007) asserted that communication itself goes “far beyond . . . interoperability” (p. 51). According to Dr. Kevin “Kip” Thomas of Boston University, interoperability “involves interactive and resilient relationships that incorporate trust and knowledge in and of each other’s capabilities and capacities” (personal communication, November 14, 2012). Dr. Thomas has contended that limiting interoperability to telecommunications “leads to inadequate development of shared understanding of needs, practices, and capabilities across E1R and EM communities” (personal communication, November 14, 2012). Therefore, it is necessary to understand the broader concept in order to understand what interoperability really means, especially within the context of the E1R.

The communities that could largely benefit from interoperability do not appear to be on the same page with respect to the concept. This is partially due to a lack of a formal definition for interoperability, as interoperability “has many working definitions” (Diallo, 2010, p. 13) and a lack of definitions for related terms (Diallo, 2010). Within E1R agencies, interoperability has been readily adopted and generally understood, yet it is difficult if not impossible to locate a definitive definition for each agency.

The New Oxford Dictionary of English has defined interoperable in respect to “computer systems or software . . . [and being] able to exchange and make use of information” (“Interoperable,” 1998, p. 955). The Institute of Electrical and Electronic Engineers (as cited in Diallo, 2010) has defined interoperability as “the ability of two or more systems or components to exchange information and to use the information that has been exchanged” (p. 11).
The U.S. Department of Defense (as cited in Diallo, 2010) has provided another definition of *interoperability*:

the condition achieved among communications electronics systems or items of communications electronics equipment when information or services can be exchanged directly and satisfactorily between them and/or their users. The degree of interoperability should be defined when referring to specific cases. (p. 11)

Interoperability is often linked to another term: *collaboration*. The *New Oxford Dictionary of English* has defined collaboration as “the action of working with someone to produce or create something” (“Collaboration,” 1998, p. 358). Berlin and Carlström (2008) defined collaboration as “prestigeless integration between horizontal parties where the form of exchange is not dictated by either party” (p. 178). This is especially applicable to this research, because the definition can be framed within the context of responders arriving at more or less the same time to the same occurrence with arguably the same basic end goals: preservation of life and safety and the cessation of additional property damage. Berlin and Carlström further described collaboration as the facilitation of actions such as restoring traffic flow, putting out fires, preventing and investigating crime, and providing first aid and transporting victims to hospital. Police, firefighter, and emergency medical services are frequently understood to operate in the sphere of response, and if one service always has the lead role as a matter of course, this could lead to the detriment of a holistic DEM approach (Kapucu, 2008). Such findings support the notion that cooperative approaches, where resources are combined and duplication is prevented or reduced, are the best for solving large problems (Kapucu, 2008).

Berlin and Carlström (2008), especially with respect to frontline personnel, have identified collaboration or the lack thereof as the result of different agendas that have begotten
competition and rivalries. In studying nurses, Palys (2003) noted that they are “cognitive beings who actively perceive and make sense of the world around them, have the capacity to abstract from their experience, ascribe meaning to their behaviour and the world around them, and are affected by those meanings” (p. 9). E1Rs are similarly cognitive beings, and participation in this research has encouraged them to become agents of change, by sharing their stories and suggesting collective strategies for improvement (Peek & Fothergill, 2009), thus breaking down the barriers that created the agendas that begot such competition and rivalries.

**Further Themes of the Literature**

In the literature, authors have identified themes that, although distinct, are related to one another in the first responder community. In a large sense, one begets another. While Brito (2007) described the issue of a lack of interagency communication in his study of a 2004 survey that found that more than a quarter of U.S. cities had no communications link between their police and fire departments, there are other aspects that are equally or more responsible for a lack of interoperability. Included are the themes of culture and mind block surrounding jurisdiction and moving forward within agencies (Rashbaum & O’Donnell, 2003), which include issues of information sharing and dissemination, trust between agencies, redundancy, and their hierarchal makeup.

**Culture and mind block.** Culture and mind block issues are often caused by the existence of politics within and between E1R agencies. It has been found that officials engage in “petty turf battles, demagoguery, and poor planning” (Landry, as cited in Caruson & McManus, 2011, p. s188). From a sociological perspective, the ephemeral nature of E1R agencies and the communications that take place between them, such as information sharing and dissemination, play a significant role in the difficulties associated with interoperability, which is epitomized by
a lack of trust between members of the agencies. Finally, the hierarchal nature of the organizations has a direct effect on the type of communications capabilities and capacities that are not only required for effective interoperability, but are understood to be permissible on the part of an individual E1R.

Protective attitudes towards one’s organization serve as a hindrance to deeper collaboration and coordination (Palm & Ramsell, 2007). The fear of redundancy precipitates fears of such effort at coordination between agencies to the point that it virtually becomes nonexistent. Individual organizations that, by virtue of their operational function, are compelled to work together instead develop silos and suffer from their aftereffects. This often breeds an aura of mistrust, which can transcend all levels of the organizations and, in the cases of first response agencies, manifest in the actual actions that take place at emergency or disaster scenes.

Although the need for interoperational cooperation between E1R agencies is patently understood, the proverbial “elephant in the room” continues to exist, in that people are either not listening to or not acting upon the myriad of evidence that suggests the need for a paradigm shift. Smith (2004) identified this reality in his examination of rescue services within both the New York City Fire Department and the New York City Police Department. On one call to the same rescue event, the police approach with its Emergency Services Unit was literally top-down, whereas the fire department approach was bottom-up, and they virtually met in the middle! These rivalries have institutionalized the politics that hamper the cooperation of these departments. This sort of animosity breeds mistrust, which is increasingly evident throughout many first response emergency services. It is compounded when the dynamic of a large municipality facing constant and varied risks is added.
McMaster and Baber (2012) further identified the issue of culture within first response organizations and the impact that it has on effective disaster and emergency response, through a case study of a flood in southwestern England. Several agencies responded, which presented specific challenges. It was determined that the organizational and hierarchal cultures of the agencies were equally responsible for presenting interoperability problems as was any technical problem such as communications. Although deemed a success in that the potential for disaster was averted, the overall response to the flood suffered from individual agencies lacking a common understanding of one another’s functions. This resulted in missed opportunities for more effective response. Close cooperation between response agencies was advocated, therefore, in order to establish “a coherent response to emergencies” (McMaster & Baber, 2012, p. 38), which included further study of information sharing and shared incident awareness; coordination of and cooperation in response activities; command, strategy, and decision making; and organizational structure and practice.

**Information sharing and dissemination.** Prevalent among agencies of a hierarchal nature is “the need to know” attitude. Information-sharing circles within these agencies are traditionally very tight. Often people are included in that circle if they need to know and, in many cases, they are considered not to need to know and are thus excluded. This significantly contributes to mind block regarding moving forward.

It can be argued that this attitude is as a result of the sensitive nature of occurrences that any E1R agency deals with. Whether concerned with the private medical information of patients; evidentiary or intelligence gathering aspects of criminal investigations, which can be dangerous; or the extremely technical manner in which fires must be fought or rescues conducted, all traditional E1R agencies have adopted “need to know” attitudes throughout their histories. In
turn, these attitudes have created a sense of mistrust between the agencies, again risking duplication of efforts.

**Redundancy.** The *Oxford Dictionary of English* defined *redundancy* as “the state of being no longer needed or useful . . . [or] the inclusion of extra components which are not strictly necessary to functioning” (“Redundancy,” 1998, p. 1557). To a point, both definitions have a place within the issue of interoperability, especially where it relates to E1R agencies.

Where agencies all respond to the same event, it is inevitable that there will be some crossover in roles and operating procedures. Within the E1R community specifically, this is most evident within the fire and paramedic services, because these services are engaged with the well-being or rescue of those affected by major emergencies or disasters. The police, on the other hand, stand aside for the most part, concentrating on perimeter security, traffic flow, or, where required, scene security and evidence collection or contamination. Although the police can certainly assist with roles involving the well-being or rescue of victims, initially this type of response is the dictate of the fire and paramedic services. Both tradition and scientific advancement have served to cloud these roles and hamper effective interoperability between these two agencies.

**Hierarchal Make-Up of E1R Agencies**

All E1R agencies can trace their roots to a relationship in whole or in part to militaries or other hierarchal organizations (“Ambulance,” 2012; Forcese, 1999; “History of Firefighting,” 2013; Police, 2013). As such, there are identified rank structures within them that must be honoured. Traditionally, these are top-down bureaucratic models that are a hindrance to the facilitation of multiorganizational collaboration (Waugh & Streib, 2006). However, in times of extreme danger, adherence to orders from a commander is imperative. Typically, this is because
a plan is being implemented, based on information received to work towards an end goal. This approach usually takes place within the initial seconds and minutes of responders’ arrival at any given scene.

Disasters and significant emergencies are described by Donahue (2006) as “sudden, idiosyncratic and dynamic” (p. 142) in nature. Response during such complex occurrences requires rapid coordination and split-second decision making (Chen, Sharman, Rao, & Upadhyaya, 2008). However, it is at the time when the action plan is being developed, by the fostering of common understanding, perhaps subsequent to the initial deployment of resources, that elements of collaboration and interoperability must take over and create a global view of intents and strategies (Chen et al., 2008). Managers and supervisors who employ micromanaging or “my way or the highway” techniques have a stifling effect on DEM, which is especially evident when an authoritarian organization, such as the police or the military, become involved with other organizations (Waugh & Streib, 2006). Thus, leaders and managers must be able to devise solutions to the problems that they understand exist, and apply flexibility rather than simple rigidity and rule obeying (Donahue, 2006). Organizations, managers, and leaders that are simply unwilling to work with others are a considerable impediment to interoperability and collaboration.

Scholars have described the phenomenon of convergence as being increasingly predominant in DEM (Waugh & Streib, 2006). Many individuals and organizations, all of whom have a desire to help, converge on the scene of any disaster. When so many people are involved, from different organizations or even backgrounds, and the overall response involves a considerable amount of spontaneity, imposing strictly top-down hierarchal decision making does nothing to facilitate interoperability or collaboration (Waugh & Streib, 2006). Indeed, as asserted
by Borodzicz (2004), the successful management of any sort of crisis event can often be attributed to a flexible or creative approach to breaking the rules.

**Summary of the Literature Review**

The most important aspect of the review of the pertinent literature is that a definitive definition of interoperability as it applies to E1Rs does not appear to exist. Further, although the literature is rife with examples of collaboration and interoperability in the follow-up to a major event, disaster, or emergency (Donahue, 2006; Kapucu, 2006; Scholtens, 2008; Waugh & Streib, 2006), there is very little about the initial response of the E1Rs or victims. Thus, through examining definitions of the term located in dictionaries and the existing literature, I offer the following definition: E1R interoperability is the ability to achieve interactive and resilient relationships by having trust in and knowledge about one another’s capabilities, capacities, and standard operating procedures through an exchange of information, education, and cross-training, leading to appropriate action.

A definition such as this allows for all aspects of interoperability to be considered: technological, cultural, societal, and hierarchal. By considering all aspects on an equal footing, E1Rs can move sufficiently forward to make use of the continuing technological advancements that appear to capture the majority of attention with respect to interoperability.
Chapter 3: Research Approach and Methodology

In this research, I aimed to understand the requirements for effective interoperability between E1Rs: the police officer, firefighter, and paramedic. Whether through receipt of a 911 call or otherwise, they are traditionally regarded as the first people to respond to any given emergency. While arguably the layperson witness or victims are really the first responders, their involvement is outside the scope of my research. Therefore, to that end, I posed the research question, “What can be learned from frontline emergency first responders about key on-the-ground considerations for needing and achieving multiagency collaboration within an urban setting?”

A series of subquestions were derived from the overall research question:

1. What are the criteria that define a major emergency requiring collaboration?
2. What aspects of a combined response in a municipal emergency or disaster require collaboration?”
3. What are the lessons learned and best practices regarding collaboration during multijurisdictional response in a municipal emergency or disaster situation?

In this chapter, I outline the rationale for the research approach adopted. I identify the research methods and tools used and explain the study conduct and how I collected and analyzed the data. To conclude, I identify all ethical issues, describe my humanistic and scientific ethical obligations as a researcher, and examine the potential of researcher bias.

Research Approach

My research topic is sensitive in a number of ways. E1Rs develop very insular groups, both within their own agency and across agencies. In many regards, animosity has built up between them. There are many reasons for this, including their historical, hierarchal makeups;
their SOPs and the competition for public funding; and associated battles concerning redundancies. Each has very specific roles and at times believes theirs to be more important than those of the others.

My literature review has revealed that there has been little research conducted from the perspective of the frontline responder. As a result, I quickly came to realize that I would have to rely not only on my own experience as an E1R for the majority of my 30-year career, but also on those of other E1Rs with whom I have worked closely. In order to balance properly the findings and inject the required objectivity, I have relied on my learning from the Master of Arts in Disaster and Emergency Management (MADEM) program in which I am enrolled.

Considering these factors, I felt that an action research methodology was most applicable as a theoretical framework. Reason and Bradbury (as cited in Stringer, 2007) stated that the purpose of theory in action research is “to bring more order to complex phenomena . . . so that it is . . . of use to the community of inquiry” (p. 187). A good theory or interpretation is one that is evidently more reasonable than others and that can be tested in the community under study. In this way, new theories enable those conducting research to take a sober second look at the scenario and identify those theories that are potentially no longer helpful or could even be considered oppressive (Somekh, 2006; Stringer, 2007). Thus, there are many strengths to action research, one of which is that diverse perspectives of different stakeholders are accepted to explain the how and why of events (Somekh, 2006; Stringer, 2007). Action research can find ways of incorporating them into mutually acceptable ways of understanding that work toward a resolution of the problem (Somekh, 2006; Stringer, 2007).
Action Research

One of the most widely accepted definitions of action research was conceived by Kemmis and Carr (as cited in McNiff, 2002):

[Action research] is a form of self-reflective enquiry undertaken by participants . . . in social . . . situations in order to improve the rationality and justice of (a) their own social . . . practices, (b) their understanding of these practices and (c) the situations (and institutions) in which these practices are carried out. (p. 2)

Using primarily qualitative data collection methods, I worked with many E1Rs in order to solicit a wide cross-section of opinions and ideas. Although my samples were primarily restricted to those who play a significant role in first response, I did attempt to speak to those of all ranks in order to balance the data as much as possible. In a further effort to obtain balance, seeing as though my concentration was on one major municipal centre, I sought potential participants worldwide through surveys posted on LinkedIn® listservs. I did this because, in my experience interacting with E1Rs from around the world, opinions with respect to operational procedure do not vary all that much. Most E1Rs are exposed to similar incidents, although varying degrees of complexity, and the end goal is nearly always identical: save lives and prevent property damage.

As a former frontline E1R, who is passionate about operations and their effective implementation, I subscribe to Elliott’s (1991) description that “the fundamental aim of action research is to improve practice rather than produce knowledge” (p. 49). Most E1Rs, through their individual but specific training and experience, are incredibly knowledgeable people. However, in practice, especially in the post-9/11 world, there is both room and a necessity for vast improvement. If E1Rs improve practices collectively, then their ability to respond effectively to whatever befalls them will, by default, improve. This will lead naturally to increased safety
within communities, something to which I have devoted my entire adult life. While I hope that this research may ultimately be used as a template for other similarly sized locations as Ottawa, this research, as Leedy and Ormrod (2005) stated in their definition of action research, “focuses on finding a solution to a local problem in a local setting” (p. 108).

Although I have retired from active police duty, service to the public generally and emergency services and policing specifically still runs through me. I have spent virtually my entire adult life so engaged, and it is not something that one can just “turn off.” The proper conduct of public service is something about which I am, and always have been, passionate. The word *proper*, or perhaps *applicable* or *acceptable*, is a relative term, especially in this context. I believe that if I see something that I think needs addressing, I should engage myself in seeking the necessary changes. Taylor (2002) endorsed this approach when he stated, “To be successful [the action researcher] must be personally interested in some aspect of the organizational process and taking action to improve the situation” (p. 9). Thus, my focus, to some degree, was “to improve the quality of an organization and its performance” (Taylor, 2002, p. 7).

**Action Research Team**

In addition to myself, the action research team for this major research project included my academic supervisor, Dr. Ron Kuban; Ms. Erin Seatter and Ms. Karen Crosby, lead editors with Editarians; and the organization’s sponsors, Chiefs Charles Bordeleau, MA (OPS), John De Hooge, MPA, CFO (OFS), and Anthony Di Monte (OPaS). Dr. Kuban provided me with the necessary assistance regarding research methodology and data collection and analysis, as well as assisted with the administrative processes of a major research project. His perspective as a seasoned researcher provided me with the necessary guidance for a significant undertaking, which this definitely was.
Ms. Seatter and Ms. Crosby provided me with editing and writing solutions and suggestions to make this project and final report flow appropriately. This was required in order to meet the stringent standards of Royal Roads University’s graduate writing requirements, as well as to navigate the style standards of the American Psychological Association.

The chiefs of the OPS, OFS, and OPaS were critical to the success of my research. Their willingness to allow me unfettered access to their staffs and their buildings in order to conduct interviews and focus groups made my work substantially easier. They were also responsible for authorizing the posting of surveys through their organization’s master distribution email lists, through which I also solicited participants. Their interest in my research also provided me with significant incentive and validation of my passion for improvement of operational effectiveness. These were of tremendous assistance during my research.

To conclude, I alone was responsible for the research. This included conducting the literature review, conceiving of and posting surveys, creating and designing the one-on-one interviews and focus group sessions, and analyzing the results, with the final goal of making recommendations.

**Project Participants**

I undertook this research out of a personal interest that I have been pursuing for the better part of 15 years. In 1997, when the Government of Canada downloaded management of major airports to private airport authorities, I was a member of the initial OPS Airport Policing Unit that took over policing responsibilities of the Ottawa MacDonald-Cartier International Airport from the Royal Canadian Mounted Police. Working in conjunction with other emergency services organizations, including fire and paramedic services, as well as the customs and immigration services of Canada and the U.S., this was my first introduction to the concept of
interoperability. Subsequent to this posting, I was assigned as a supervisor in the OPS Communications Centre, which also controls 911 calls for all emergency services in Metropolitan Ottawa.

These assignments made me acutely aware of not only the technological and operational ability to become more interoperable, but also the necessity to do so. Indeed, in my later experience as a patrol supervisor, due to my knowledge of the technical ability to communicate across agency boundaries, I was able to coordinate members of the Ontario Provincial Police (OPP) and the OPS in the successful capture of a fugitive car thief. The subject had abandoned his vehicle while in OPP territory and was pursued on foot into OPS territory, where he was arrested. This scenario presented itself when suddenly, on the OPS operational channel, I heard strange voices, later identified as belonging to OPP officers. Knowing of the technical ability to intercommunicate, I confirmed that someone had “pushed a button” to do so, but no one had been advised accordingly. This required that someone take command in order to resolve the situation, which I did.

Due to my personal interest in the research topic, I have wanted to see if my interest mirrors that of other E1Rs with whom I have worked, and who continue to work at the street level in Ottawa. As a result, I conceived of a survey directed towards frontline E1Rs and followed this up with one-on-one interviews. To substantiate the data received from the surveys and the one-on-one interviews, I arranged for focus groups not only within each agency studied, but across them as well. This was intended not only to get the feelings of the individual E1Rs, but also to introduce them to the opinions of one another and have them discuss issues in an open and informal yet safe environment, where they could be assured their opinions would not to be used against them. Having volunteered to participate themselves, my samples were contacted for
further one-on-one interviews and focus group participation. I am greatly appreciative of the collective chiefs’ willingness to allow their staffs to be able to so volunteer and for me to contact them in turn. The chiefs played no role whatsoever in suggesting or restricting participants, nor are they aware of who participated. It is my firm belief that this allowed for a far more holistic involvement on the part of all participants, with them knowing that they could offer their opinions without prejudice.

The surveys posted through the master distribution email lists of the OPS, OFS, and OPaS garnered well over 200 responses, from which approximately seven to 10 members of each service agreed to further participate in one-on-one interviews. Of these members, I secured, through an open email call, five to six for intraagency focus groups, and of those, two from each service were asked to participate in an interagency focus group. Their individual participation was based largely on their availability for the scheduled meetings. Anyone who wanted to attend was more than welcome to do so.

I decided to conduct the one-on-one interviews in a loose, semistructured manner. I read my research question and the subquestions to all participants and asked that they consider them when offering their opinions based on their experiences. I decided on this approach because, as previously indicated, E1Rs are a unique group, for whom trust is a delicate issue. There are probably several arguments as to why E1Rs are the way they are, but in my opinion it has much more to do with what they see and experience on a daily basis. E1Rs collectively see, feel, hear, taste, and smell a side of society that the layperson will not ever see or hope to see (let alone experience with any other physical sense) or will even believe exists. Yet E1Rs know that it does, and they live it daily. Thus, there is a collective feeling that the layperson cannot possibly understand them. Such a phenomenon creates singularities such as the “thin blue line,” which is
understood to be, to the law enforcement community, akin to the moats that protected medieval castles. Each service has its own version of the thin blue line, and breaking through it is virtually impossible unless you are a member of the community.

Support for these statements comes neither from any research that I have undertaken, nor from any literature that I have read. In my experience locally, provincially, nationally, and internationally with all E1Rs with whom I have come in contact, it is simply the way it is. As a result, I undertook what I would consider a more holistic approach to the interviews, rather than a clinical one, requiring specific answers to specific questions. Creswell (2007) endorsed the same type of approach: attempting to hear what interviewees say by not utilizing predetermined questions. Thus, while I asked participants to consider the research questions and subquestions, I sought to engage in more of a brainstorming session to seek opinions through the participants’ collective experiences and have them become involved in a session of free comment, without risk of prejudice. I took notes of our discussions, and identified anecdotes and points that I believed were of specific relevance to my research. I followed these up with emails to the participants to ensure that what I had recorded was what they believed they had said.

The intent of the action research model I designed for this project was to collect data and improve the knowledge of E1Rs throughout all the agencies in Ottawa. I designed this study to get participants to identify the shortcomings of and potential improvements for frontline emergency response, especially where it relates to major incidents, in Ottawa. Getting E1Rs to speak openly and without prejudice is a feat that only a trusted interviewer can accomplish. As a retired police officer who spent the majority of his career on the front lines, my advantage was that I could accomplish just that. Thus, I was able to reiterate that there were no right or wrong answers to questions I was posing and no suggestions that were more worthy than others.
Blending all the information obtained and coming to consensus with respect to it is the most effective approach to potentially instituting change.

**Research Methods and Tools**

I discuss a number of issues in this section. Primarily I address the methods I employed for the collection of information and data. I also outline the process that I developed for this action research project and why I did so. I examine the important issues of validity, trustworthiness, and reliability and finish by detailing my data collection methods and the sources.

I decided that I would use a combination of data collection methods, including a two-part survey, one-on-one interviews, and focus groups. I submitted my research questions, subquestions, and survey questions to my academic supervisor, Dr. Kuban. As a result of Dr. Kuban’s feedback some minor adjustments were made, and once approved they were submitted to the Royal Roads University Ethics Review Board, where all were fully approved.

Through the sponsorship of the chiefs of the Ottawa police, fire, and paramedic services, the survey was published on the master email distribution lists of all three services. My contact information was included in the invitation and implied consent form (see Appendix A) that was attached to the surveys (see Appendix B for questions). A more generic version of this survey, simply with references to Ottawa removed, was posted on several group boards on LinkedIn to which I belong, and participants were solicited to complete the questionnaire by means of an invitation to participate in an online survey (see Appendix C for the informed consent). The professions to which the participants belonged were unknown; however, I assumed that all either are or were members of a police, paramedic, or fire service.
I then conducted one-on-one interviews with members of the E1R agencies in the City of Ottawa. Frontline E1Rs are an interesting group of people. Having been one for most of my adult life, I believe I have a unique perspective in understanding them as a whole. To that end, I know what “makes them tick,” and as a result approached data collection in what may be considered an unorthodox manner. For the most part, interview participants were secured through completion of the survey.

All interviewees had significant yet varied frontline emergency response experience, some of them in more than one agency or capacity. All were full-time employees and had several years of experience. Some were supervisors or managers, and most were currently assigned to frontline duties.

Four focus group sessions were held subsequent to the interviews. One session involved participants from only the fire service, one session involved only the paramedic service, and one session involved only the police service. The final session involved two participants from each service in a combined group. Each session was a loosely structured discussion facilitated by me. The basis of the discussions surrounded the themes that had been discovered through the research; questions that arose during the sessions were also discussed.

**Data Analysis**

The surveys included closed- and open-ended questions and were created through an online survey tool. Participants completed the surveys through the SurveyMonkey® website (www.surveymonkey.com). This site includes data analysis and tabulation functions, which assisted the data assessment. SurveyMonkey also collated all the responses to the open-ended questions and allowed me to print them for my own analysis.
I reviewed every answer to every open-ended question and identified recurring themes. I counted the number of times each theme appeared within answers to the individual questions and coded preidentified subthemes. Based on the number of applicable answers to the questions (answers such as “n/a,” “I don’t know,” and “good luck with your research” were discounted), I calculated as percentages the appearance of each theme and subtheme. I also calculated as percentages the appearance of each theme and subtheme across all survey responses or interviews.

In addition to the surveys, I also conducted one-on-one interviews with willing participants from each of the Ottawa E1R agencies. Further, focus groups were conducted both within and across the agencies within Ottawa. During the interviews and focus groups, I took notes of the discussions and recorded the sessions. I went over the recordings to make sure that what I had captured in writing was what I deemed necessary, and I sent emails to the participants to verify the accuracy of the data. In the event of a discrepancy, all relevant participants were included in the email and were asked to reply by using the reply all function on their computers, so that I could ensure the accuracy of the data.

All notes taken, regardless of whether during one-one-one interviews or focus groups, were in notebooks to which I alone had access, and all recordings were kept on a device to which I alone possessed the access key. I kept all data in a locked storage cabinet.

In the analysis of the data obtained, I used Creswell’s (2007) data analysis spiral model, which involves several loops as opposed to any linear sort of structure. The first loop involves the management or organization of the data. Once the data are organized, the process of analysis takes over, during which I developed a sense for the entire database. From there, I interpreted the data and classified them into categories, codes, or themes. That allowed for the synthesizing of
the data, which resulted in my being able to identify what I believe to be the target issues with respect to E1R interoperability. From there I was able to include this information in my final report and make appropriate recommendations.

I organized the data in three separate streams. I separated the data obtained from the questionnaire, the one-on-one interviews, and the focus groups. Initially, I looked for common themes within the individual streams and within those themes identified any subcategories. I then cross-referenced the data streams to look for similar themes and subcategories and analyzed all of this against the literature and within the context of the research question and subquestions. I was then able to identify both commonalities and gaps, which then formed the basis for my recommendations.

**Ethical Issues**

In research of any kind, it is essential that consideration for ethics be at the forefront. This is most applicable when the research involves humans, as it must then be conducted with the respect and consideration that all human beings are due, as stated in the *Tri-Council Policy Statement* (Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, & Social Sciences and Humanities Research Council of Canada [Tri-Council], 2010). Ethical research in general, however, must include values, standards and principles that are appropriate at all stages (Adler & Clark, 2003).

Thus, throughout all stages of my research, I adhered to these provisions which are in line with the requirements of Royal Roads University. In particular, because my research involved humans, I paid particular attention to those requirements. These included the three core principles of the *Tri-Council Policy Statement* (Tri-Council, 2010), which are respect for persons, justice, and concern for welfare.
Human beings are recognized for their intrinsic value and, as a result, they are due respect and consideration (Tri-Council, 2010). As such, it was imperative that, as research participants, I honoured any requirements they may have had. They were offered and assured anonymity and, if they were involved in any focus groups, the group at large was requested to maintain the confidentiality of all participants and discussions. Participants were provided with my contact information and were encouraged to contact me at their convenience if they had any questions or queries.

My research participants were solicited through their voluntary involvement in a questionnaire posted on their workplaces’ master distribution email lists. None were instructed to do so and each had the right to refuse to participate or withdraw from participation at any time. This conforms with the Tri-Council’s (2010) contention that an “important mechanism for respecting research participants’ autonomy is the requirement to seek their free, informed and on-going consent” (p. 8). The questionnaire link could be clicked on, upon which they would come to a letter of introduction that I authored about myself and my research (see Appendix A). I also introduced the institution with which I am affiliated and provided contact information for the program head at Royal Roads University.

All participants who wished to be further involved in my research were offered an invitation form (see Appendix D for the one-on-one interview and Appendix E for the focus group), which outlined the provisions under which they would participate. These forms indicated that I would be compiling, analyzing, and synthesizing data, which may or may not be reflected in a final report. It also indicated that any information or utterances used would not be attributed to any specific person. Further, they were all asked to sign consent forms prior to their
involvement in interviews or focus groups (see Appendix F for the interview consent form and Appendix G for the focus group consent form).

I did not employ any vulnerable persons as described by the Tri-Council (2010). I spoke with E1R professionals who either are engaged or have recently been engaged in frontline emergency response duties. At no time did anyone offer me any information, nor did I discover any information, that would allow me to believe that any of my research participants belonged to a vulnerable population.

**Research Quality: Soundness, Validity, Authenticity, Researcher Bias**

The research I undertook surrounds an operational dynamic. As a result, a sound method of obtaining significant data was participant observation, which has been increasingly evident within qualitative studies in recent decades (Kawulich, 2005). However, due to the nature of the professions under study, unless one is specifically a member of an E1R, the ability to become a participant is severely restricted. In addition, as a recently retired member of the OPS, I am acutely aware of the existence of agencies’ standard operating procedures, which differ substantially, and the potential limitations these differences place on the opinions and experiences of frontline E1Rs. I maintain significant relationships with all levels of first response agencies within Ottawa and therefore remain, to a point, part of the dynamic that is “participant observer.”

Based on extensive experience, I am aware that collectively, members of E1R are typically an insular group. Having been an E1R for all of my working life, I expected that potential respondents would accept me as a former member of their ranks who is cognizant of their respective organizational or service culture and their “manners, leadership, politics, social interaction and taboos” (Kawulich, 2005, p. 5). I further anticipated that these potential
respondents from among the E1R population would relate to the value of this study, be more willing to participate, and be accepting of me as a researcher within their otherwise close ranks. In this study, I balanced these concepts along with research obtained from the relevant literature.

Given my many years in the police service, I recognized the potential—real or perceived—for bias in favour of the police. My intent was to have equal representation of all three services such that no one service offered more weighted opinions than another. I also intended to conduct my initial analysis without first identifying the service of the respondent. In this manner, I hoped to ensure as much objectivity as possible. The study strove to have combined focus groups that included members from all three E1R services, rather than simply separate focus groups for the police, firefighters, and paramedics, in an attempt to bridge known and perceived gaps.

The study participants were comprised of E1Rs currently assigned to street-level operations within their respective agency, in both urban and rural response areas. By securing additional participants from street-level supervisory and middle management ranks, further balance was achieved. All participants were restricted to those currently assigned to frontline duties, as opposed to duties of an administrative or executive nature.
Chapter 4: Findings and Results of the Action Research Study

In this chapter, I outline the findings and results of the action research project. I compare and then balance the qualitative data (obtained through one-on-one interviews, focus group sessions, and open-ended survey questions) with the quantitative data from the closed-ended survey questions. In order to guard the confidentiality of the participants in this research, any direct reference to them is made in the following manner:

- Police interviewees: P1, P2, P3, etc.
- Firefighter interviewees: FF1, FF2, FF3, etc.
- Paramedic interviewees: Pa1, Pa2, Pa3, etc.
- Police focus group members: PF1, PF2, PF3, etc.
- Firefighter focus group members: FFF1, FFF2, FFF3, etc.
- Paramedic focus group members: PaF1, PaF2, PaF3, etc.
- Combined focus group members: CFG1, CFG2, CFG3, etc.

There is one exception; one communications centre worker from all three services agreed to participate. In order to maintain this person’s confidentiality, I have used CC1.

Study Findings

Through analysis of my data, I identified several recurring themes that hinder interoperability between E1Rs in Ottawa and, perhaps, other similarly sized metropolitan areas:

1. SOPs: Each agency has its own SOPs, which are often at cross-purposes to those of other agencies;
2. Silos: E1Rs have traditionally operated and still operate under silos;
3. Training: There is little, if any, cross-training that would facilitate interoperability.
4. Leadership: Any substantial change in operating procedure must be driven by middle management as opposed to senior or executive management;

5. Communications: From both technical and interagency perspectives, more emphasis needs to be placed on interagency communication and information sharing; and

6. Politics and culture: The competition for importance and even validation between agencies, and the requirement to continually “do more with less,” along with the resultant lobbying and impact on SOPs, is seen as a particularly delicate hindrance to interagency interoperability.

**Finding 1: SOPs.** Each agency has its own SOPs, which are often at cross-purposes to those of other agencies. “Following clearly defined procedures is imperative to ensuring quality in any industry or profession” (Grahl, 2011, p. 8). Such procedures, regardless of the industry in which they are found, are needed for a number of reasons (Fazzi, 2007), not the least of which is to ensure proper response to any given situation. However, when individual agencies work closely together, often certain SOPs are developed and applied at cross-purposes to those developed by other agencies.

The survey asked the following questions: “With respect to interagency interoperability, as it relates to frontline emergency response, what do you think are the most important aspects for success?” and “Similar to the previous question, what do you believe are the biggest hindrances or obstacles to effective interagency interoperability?”

Respondents identified the issue of SOPs and the lack of coordination regarding them among the E1R agencies in Ottawa as the most prolific issue. Responses such as, “Not knowing completely what the other agencies do and how they operate” confirmed such sentiments. This ignorance of other agencies’ SOPs leads to a lack of respect for what the roles of coresponders
might be. This then makes trust building supremely difficult, resulting in animosity. In turn, it leads to what one respondent termed “hyper focusing” on only the needs and goals of one’s own agency, even while working incredibly closely with members of other agencies.

SOPs developed within the fire service are mainly initiated for safety reasons, whereas in the police service, they often surround accountability and the (current) law, and are regularly subject to reassessment due to case law or parliamentary decisions. While all E1R agencies can proudly assert, “We run in when everyone else is running out,” there is no doubt that the fire services “run in” the most. Thus, given the physical and potential dangers fire services personnel face in many scenarios, their SOPs have to address the well-being of their members.

The police service is accountable to the public that it serves. Indeed, it is under greater scrutiny from the court of public opinion than the other two services combined. In addition, as it has the power to limit the rights and freedoms of the layperson under specific circumstances, its SOPs must contain a significant legal perspective. Whether with respect to detention of the person, use of force, or the securing and preservation of potential evidence, policing SOPs, by design, might fly in the face of those issued by other agencies.

On the other hand, paramedics are primarily concerned with the well-being of the patients whom they encounter. Although paramedicine is a relatively new profession, its history can be traced to the care of others during Roman times (“Ambulance,” 2012). Thus, paramedic SOPs are directed at providing prehospital care for patients and making sure they get either the necessary treatment without transport to a local medical facility or treatment and priority transport for further medical attention.

When the response SOPs of all three agencies are activated and interact at a community-level emergency or disaster, confusion often results. Many survey respondents, interviewees, and
focus group participants identified a serious motor vehicle collision as the type of occurrence where all three services converge most often. Depending on the severity of the occurrence to which they are responding, each of the three services will respond based on its own mandate, often to the detriment of the other agencies. For example, paramedics will typically rush towards a heavily damaged vehicle to assist potentially injured occupants, yet they may be held back by fire services personnel concerned with first cutting battery cables to prevent the sudden deployment of airbags that may have not yet exploded, potentially making the paramedics another casualty. In addition, firefighters are highly trained at the extrication of trapped occupants, yet may not understand that a paramedic requires urgent access to a specific area of the damaged vehicle or injured occupant, due to the nature of injuries sustained. A specific example is crush injuries, where the part of a vehicle that is trapping a person may also be providing enough or more than enough pressure to prevent severe bleeding; it may be actually preserving the individual’s life. Until the person is stabilized, firefighters cannot release or remove that part of the vehicle, because of the medical advantage it creates. Thus, when E1Rs have “no idea of [another agency’s] SOPs” (Pa4), a conflict may ensue, where one E1R argues with another E1R about the priority of his or her agency procedures, to the detriment of the injured parties. Furthermore, any particular E1R may need or want something that other E1Rs may not be able to provide, because “they have more important things to do,” (Pa4) as per their own SOPs.

Similarly, the police may be concerned about evidence preservation, and the entire scene may offer significant clues about what transpired. Yet evidence can be virtually eradicated by firefighters and paramedics rushing to the aid of affected parties; one survey respondent called these responders “the evidence eradication team.” The involved parties are not considered
“responsible” or “at fault” by fire services or paramedics, whereas the police may be determining whether this is a crime scene.

This type of confusion and misunderstanding of one another’s SOPs led over 54% of survey respondents to suggest that their level of interagency collaboration at scenes was only adequate or less than adequate. Although over 54% of respondents reported that they engage in more than 40 occurrences annually where collaboration or interoperability of some sort is required, there is obvious room for significant improvement. As one respondent suggested, “While our jobs are similar we also have a lot of differences that need to be understood.” This need was a recurring sentiment in the literature as well as in the survey responses.

**Finding 2: Silos.** E1Rs have traditionally operated and still operate under silos. It stands to reason that agencies that work closely with one another in an operational capacity, neither understanding nor appreciating the SOPs of the other, will likely work in varying degrees of silos. Command-and-control-oriented cultures, to which E1R agencies certainly belong, are often seen to breed silos (Rosen, 2010). An interviewed police officer indicated, “Silos have created a total lack of communication due to the hierarchal organizations” (P1). Such cultures arouse fear, where managers focus on guarding turf rather than engaging colleagues outside their group (Rosen, 2010). Similar to the issue of SOPs, this environment results in the agencies working at cross-purposes to one another. The fact that E1R agencies in Ottawa work in such silos was the second most prevalent concern, identified by 37% of E1R respondents.

One survey respondent described the issue of silos succinctly: “Fire, EMS, police typically attend to their own area of expertise. Fire put out fires, EMS treat the injured and the police investigate the occurrence.” Such attitudes can cloud the knowledge of E1Rs regarding members of other agencies and what their roles at any given scene entail. The misinformation
can manifest in statements such as what one survey respondent offered: “The culture within the fire service is such that they work well with other firemen . . . ONLY.” The respondent’s interpretation of the fire service, that “they want to work with others but believe their mandate is inclusive of . . . virtually anything” can and certainly has been applied to other E1R agencies.

These sorts of attitudes breed resentment and a complete lack of trust. They further exacerbate and foster inaccurate opinions of one another that can then evolve on their own. This results in statements such as this one from a survey respondent: “Paramedics tend to lead the medical [scenarios] and sometimes talk down to us (rural FF [firefighters]). Police tend to just disappear and do paperwork.” It also leads to petty jealousies among agencies with respect to overall mandates and equipment that others might have. A particular irritant between agencies that is a petty jealousy, yet also the brunt of jokes, is that firefighters sleep at night, while the other E1Rs are awake and alert. Although some E1Rs can approach this reality and its associated irritation lightheartedly, others are less able to do so, with the result that it is a major source of interagency animosity.

The existence of such silos also poisons collaboration (Bitto, 2007). If members of each agency are more concerned with their own agendas, politics, and protocol, and an inability to see beyond their own limited parameters (Bitto, 2007), they may feel it is better to play safe than to take unnecessary risks and gain unwanted attention. This, in turn, develops the sort of “me first” attitude that makes some E1Rs believe that, regardless of the scenario, their organization should always take the lead or be in charge.

**Finding 3: Training.** There is little, if any, cross-training that would facilitate interoperability. The need for training was identified by more than 25% of survey respondents and was the third most important concern of E1Rs in Ottawa. E1R training is ongoing for a
number of reasons. Not only is initial job-specific training required for qualification in the position, but due to continued updating and upgrading of adequacy standards, the need for ongoing training is virtually constant. Entities such as government, which oversee E1R agencies, often mandate such training.

Traditionally, training has always been agency specific. One survey respondent indicated that all three services are trained for their specific roles “because it is the nature of there [sic] jobs.” Sometimes members of each agency get in one another’s way “because we aren’t sure what they need to do and the reason for it.”

At the strategic level, Ottawa is on the cutting edge of interagency training and interoperability. As indicated by Sergeant Rob Bernier of the OPS at the Second Annual National Capital Special Operations Symposium, the OPS Emergency Services Unit (ESU) integrates all three E1R services (personal communication, November 17, 2012). All members are cross-trained for all functions. In addition, the Ottawa Police Tactical Squad has long incorporated tactical paramedics or emergency medical services. The squad attends high-risk calls in order to deal with the very real possibility of serious injury to anyone associated with such high-risk incidents. Squad members engage in cross-training and are issued the appropriate personal protection equipment commensurate with such potentially hazardous occurrences.

In a basic tactical arena, that of the first responder, the response time from callout to setup of any such strategic team is a minimum of 90 minutes (Inspector M. Ford and Sergeant R. Bernier, personal communication, November 17, 2012). In that time, E1Rs have to be able to coordinate themselves at the scene of a major disaster or occurrence such that an effective and collaborative response can be maintained. This critical juncture is a vital area of concern to Ottawa E1Rs.
When examining cross-training among agencies, survey responses were practically split down the middle as to whether any training had been received. When it comes to the frequency of the training, there are some alarming observations. Over 80% percent of respondents indicated that the training they had received was limited to an annual or less frequent basis. Indeed, less than 5% of respondents indicated they received annual training. The type of the training indicated by most respondents fit into the previously mentioned strategic approaches rather than the tactical approach of the front line. Such training included ESU; chemical, biological, radioactive, nuclear, and explosive; underwater rescue; urban (including heavy) search and rescue (H/USAR); and Incident Management System (IMS) training. Although vital to effective response to a disaster or major emergency, this training does not address what is required for the initial 90 minutes of response.

Almost 60% of E1R survey respondents identified a desire for cross- or interagency training, with responses ranging from the very basic, “Well, we should start from square 1 . . . how many police and paramedics are on duty today and where are they located” to a more intricate description:

Semi-annual joint training exercises with all three services. Annual briefings to front-line operators about inter-agency inter-operability roles and responsibilities. More exercises like this, surveying emergency personnel about their observations so that the respective leaders of each service can clarify operating procedure/responsibilities and provide unified direction through their chain of command so everyone is clear on who is in charge for what situations and what everyone’s roles are.

The varied roles and responsibilities that E1Rs have in any given situation also dictate that each has significant restrictions. One paramedic interviewee indicated, “We need to know
not only the SOPs but the restrictions as well” (Pa2). This supports the notion that the type of training that E1Rs want and require ranges from the basic daily SOPs of each agency to that which is more job specific, such as extrication and rescue (including H/USAR) from the fire service; crime scene investigation and evidence recognition, collection, and preservation from the police; and epidemic, triage, and stabilization from paramedics. Further, there are also different job titles and functions that E1Rs may not be aware of in their sister organizations, such as primary, advanced, and critical care paramedics; suppression and support units within the fire service; and patrol and investigative officers within the police service. This sort of awareness is especially critical, as one paramedic interviewee stated, “where our roles intermingle” (Pa6).

Although training is a virtual constant within E1R agencies, the coordinated approach to it should start at the earliest stages. Postsecondary programs exist for all agencies, yet standardization among them and interaction between them is limited. When asked where applicable interagency or cross-training should begin, 100% of interviewees and focus group members asserted that it must begin at the earliest possible stages, which is the community college level. There, even before potential candidates are identified for employment, they should be indoctrinated in the concepts of interoperability and collaboration.

Training is a multifaceted issue with respect to the promotion and success of interoperability and collaboration between E1R agencies. Well over half of the respondents identified training as a particular area that must be given attention. It also has the unique aspect of being applicable to all levels of every organization, from the prerecruit up to and including most senior levels. Due to its impact, training is relevant to all other findings.

Finding 4: Leadership. Any substantial change in operating procedure must be driven by middle management as opposed to senior or executive management. Traditionally, middle
managers have been seen more as leaders than those in senior or executive positions. Leadership can be defined as the process of influencing others to accomplish a mission by providing purpose, direction, and motivation. It can be bestowed upon one formally by virtue of position and rank, or informally due to the earned respect and admiration others have for one (Coakeley, 2009). It is also one of the most contentious issues within any organization, large or small, and certainly within E1R agencies.

In organizations that are operational in nature, effective leadership is essential (Devitt & Borodzicz, 2008; Hardy, 2013; Waugh & Streib, 2006). With leadership identified in responses 25% of the time as having an effect on collaboration and interoperability, it was the fourth most important factor for survey respondents; 22% of survey respondents suggested that leadership is a requirement for interoperability success, and 14% indicated it was a hindrance when missing.

Because this research dealt with the operational dynamics at a tactical level, the subject of leadership was restricted to those at middle rather than upper or executive management. The leadership structure and its related rank or responsibility level vary from one agency to another. In Ottawa, the middle management rank structures are as follows:

- **OPS**: Sergeant and Staff Sergeant;
- **OFS**: Lieutenant, Captain, District Chief; and
- **OPaS**: Operational or Administrative Superintendent.

A common theme for the survey participants was that the rank structure and insignia were virtually unknown outside their respective agency. For example, paramedics may have known that three stripes on a person’s sleeve indicated a supervisor, but did not know the exact rank. Similarly, if there is a crown somewhere on the uniform, what does that mean? What is the difference between one, two, or three bars on an epaulette or a blue, red, or white helmet on
firefighters or paramedics? This sort of knowledge gap between organizations can lead to confusion when one agency requires something from another, yet nobody knows who to approach to secure needed information or resources.

Participants frequently identified issues of leadership, such as its absence or competing styles within and across agencies, as a concern. Although it is not proven and outside the scope of this research project, one reason for the concern over leadership might be that a more educated, younger generation is assuming ever more responsible roles within E1R agencies. As one firefighter interviewee conceded, “More education is a good thing but management is not as well educated” (FF4). This often results in pushback from management, when younger or newer staff members suggest progressive action. Further, when people receive beneficial leadership training, such as Incident Command Levels 1 and 2, those people are often transferred to sections where they are no longer required to apply such leadership functions (P3).

Successful interoperability and collaboration require the type of leadership that can, as one survey respondent indicated, “see past individual service goals and look both laterally and vertically to see what makes the greatest sense for all services and for the public they represent.” This sentiment ties into the issue of unified command across E1R agencies at the scene of a major incident. The most important aspect of unified command was seen to be that leaders quickly determine who is in command and, depending on the emergency, which agency will take the lead. Once established, the information flow must be constant both between and within the responding agencies such that the status of the occurrence is understood across the board, as is the direction of the unified response. This attention to a clear chain of command will result in the efficient setting of priorities in order to ensure the highest quality of response and effective resolution of the situation at hand.
Training of leaders in operational roles was also seen as an area that required improvement. Over 40% of survey respondents and interviewees indicated that all operational supervisors should be trained to a minimum of IMS 200, as offered by Emergency Management Ontario (2008). This training should be undertaken mutually with all E1R services, to have an opportunity to develop relationships and to further understand individual agency SOPs.

My personal experience exemplifies the necessity for such developmental training. For almost 10 years, I had been instructing in the Police Foundations Program at the community college level. In teaching a course on traffic law, I advised students of the regulations surrounding the display of coloured lights on motor vehicles and the restrictions associated thereto. One of the colours that we dealt with was green, which is issued to volunteer firefighters. It is used as a courtesy to allow a vehicle displaying it to proceed first anywhere traffic controls, such as traffic lights, stop signs, or yield signs, are present. Flashing green lights offer no legal authority for the user to disobey any traffic law; however, they do identify the user as a volunteer firefighter, en route to a fire or an emergency call.

Shortly after giving this lesson, I was engaged in my capacity as a street supervisor for the OPS, when I observed what I knew to be an OFS district chief’s vehicle attend a scene. Despite being fully marked, with roof lights and sirens, the vehicle displayed a green light on top of its light bar. I was confused as to why such a vehicle would display a light restricted to a volunteer firefighter and directly inquired of the district chief who was operating the vehicle. He advised me that a green light is the international symbol of command, which I later confirmed through research (Federal Emergency Management Agency, n.d.).

Coordinated and effective leadership within and across E1R agencies in Ottawa is obviously a critical characteristic of effective response to a major disaster or occurrence. Middle
managers or leaders have the unique perspective of being able to communicate not only with the front line, but also with the executive levels of any organization. Thus, they have the ability to communicate internally and externally across agencies. Without such leadership, the confusion that would reign supreme would not only affect the outcome of the disaster but would also greatly harm the morale of all agencies, vertically and horizontally.

Finding 5: Communications. From both technical and interagency perspectives, more emphasis needs to be placed on interagency communication and information sharing. Communications as a concept within emergency first response has many variables. Not only is it required among the members of any one agency, it is also required across agencies. Thus, the necessities are both vertical and horizontal. September 11, 2001, to quote U.S. President Franklin Delano Roosevelt’s description of the attacks on Pearl Harbor during World War II, is “a date which will live in infamy” (“Infamy Speech,” 2013, para. 1), and there is no doubt that it changed the world in which we live. The need for technical communications interoperability between all agencies involved in disaster response and management became of paramount importance, and it has received the input of much research and money (Boyd, 2005; Brito, 2007; DHS, 2012; Engebretson, 2007; Hawkins, 2007; Jenkins, 2006; Public Safety Canada, 2012). However, where it relates to the initial response to any such occurrence, the basic concept of communications (or communicating) and information sharing both vertically within an agency and horizontally across agencies is equally important.

Communications was cited in 21% of the survey answers to the open-ended questions. Common language was one of the most commonly mentioned communication variables. The California organization Firefighting Resources of California Organized for Potential Emergencies (FIRESCOPE) originally conceived ICS as a system of command and control that
helps organize and structure a continued response to a significant occurrence (Clayton & Thorpe, 2011). One strategy of the ICS is a commonality of language for all users (DHS, 2007; Federal Emergency Management Agency, 2006; Emergency Management Ontario, 2008), because the use of coded language, including 10 codes, serves mainly to confuse multiple users.

Such codes have been continually and widely created, used, and adjusted, with significant differences of meaning: for example, a “police officer down” in Ottawa is a 10-78, but a “police officer down” in New York City is a 10-13, which means damage to property in Ottawa. This also often occurs in jurisdictions much closer to one another. When the Ottawa, Nepean, and Gloucester Police Services amalgamated in 1995 to form the Ottawa-Carleton Regional Police Service, the original OPS employed a specific 10 code that, once spoken over the air, cleared backup in the event of an engaged emergency button. It was mandatory that this code be verbalized. The same specific 10 code in the Nepean Police Service meant the officer was on his or her lunch hour. Many responders, practitioners, and academics believe that these codes have been used to keep operational information confidential from not only the public but, in some cases, other agencies as well.

When asked to identify the biggest hindrance to interoperability within Ottawa, one firefighter interviewee claimed, without hesitation, “Nomenclature” (FF5). Before any large scenario takes place, nomenclature must be made consistent. Despite beliefs to the contrary, there is no fundamental understanding of one another’s codes or nomenclature among E1R agencies in Ottawa, which the firefighter interviewee saw as “a wall to a commonality of understanding” (FF5). For this reason, OFS has adopted a standardized radio format. In an age of developing unified response and command, agency nomenclature appears to be an outdated concept.
The OPS manages and operates the 911 centre in Ottawa through its communications centre. Callers are asked whether they require police, fire, or ambulance. The call is then routed to the appropriate organization’s communications centre for further assistance. In 2001, the City of Ottawa adopted a tiered response system, which means that, unless a call received by one of the communications centres is obviously the exclusive purview of the agency concerned, all centres are notified and the appropriate resources are dispatched. As a result, all three services attend some of the most basic calls, where “basic” implies both frequency of calls as well as level of required service. Although initially believed to be a practical use of resources, the tiered response system is now becoming problematic, as E1Rs are continually questioning why all agencies are responding to something that requires only one of them.

Many police participants gave an example of such a basic call; the habitually drunk, often homeless, person, usually at the same location. Often found lying down, the person is erroneously reported as injured, prompting the priority one (emergency) response of all three agencies. Respondents noted that horizontal communications across agencies would allow for an assessment by an arriving E1R, who could seek assistance from other agencies, should it be necessary. However, some agencies have protocols that do not allow for the cancellation of their response, once dispatched. This was often much to the chagrin of E1Rs at the scene, who felt their judgement and professionalism were being questioned.

While the cited example is hardly a disaster or significant emergency, it is reasonable to assume that unless the communications issues concerned are resolved at such a lower level of occurrence, when something of a more important nature takes place such issues would be compounded exponentially. One survey respondent went as far as to say that the lack of communications cooperation between E1R agencies in Ottawa is the major contributing factor
towards operation in silos. The respondent went on to say that “if communication was better BEFORE we all arrived on scene, it would alleviate the utter confusion.” This sentiment was confirmed by another respondent, who indicated that information received through the individual communications centres was either not the same, not received within a timely fashion, or was withheld by one agency or another, not believing it to be worthy of sharing; sometimes an agency was not even willing to share information.

When it comes to a major scenario, CC1 indicated that there is never a communications worker on the scene. Communications centre workers are continually at a disadvantage when it comes to any type of call, as they are never there to see how a scenario plays out. They only know what they are told either by callers or by E1Rs. They are not able to make a visual assessment of the scene, resulting in their not understanding it; they do not know what is taking place, what is required, or what action should or could be taken. Although the logistics of having communications centre personnel attend the scene might be difficult, they could certainly be part of a secondary response, such as ESU, tactical, H/USAR or, indeed, part of a mobile command post.

Thus, the multifaceted issue of communications has to be addressed with respect to the part it plays in interoperability and collaboration between frontline E1Rs. Should it not, the lack of technical communications capabilities combined with the deficiency of the simple exercise of communicating, the differences in messages issued and received by individual communications centres, and the inconsistent nomenclature that continues to exist will impede effective interoperability and collaboration.

**Finding 6: Politics and culture.** The competition for importance and even validation between agencies, and the requirement to continually “do more with less,” along with the
resultant lobbying and impact on SOPs, is seen as a particularly delicate hindrance to interagency interoperability. Politics and culture within E1R organizations have a Medusa-like quality—you can resolve as many issues as exist at any one time, yet there will always be another issue to take the place of one that has been resolved. There are a number of reasons for this, not the least of which is the fact that, as operational organizations, the subjective opinions of many frontline E1Rs regarding politics cause misinformation and promote a culture of one-upmanship among agencies. Further, as hierarchal organizations, there is a distinct separation between the operational and executive levels. Although many get along, many others do not. Additionally, due to the nature of their occupation and perhaps training, most E1Rs have a Type A personality; all of them have an opinion and want to be in charge. Transpose these phenomena across the agencies as they interact at a scene, and the political and cultural impediments to interoperability or collaboration can be exacerbated exponentially.

What most separates E1Rs from laypersons is the culture of the organizations. Franzoi (2005) described the culture of an organization as a “total lifestyle of a people, including all the ideas, symbols, preferences, and material objects that they share” (p. 15). A further description of organizational culture was offered by Schein (2004):

A pattern of shared basic assumptions that was learned by a group as it solved its problem of external adaptation and internal integration; and that has worked well enough to be considered valid, and therefore to be taught to new members as the correct way to perceive, think, and feel in relation to those problems. (p. 17)

Such a description can easily be applied to E1R agencies especially due to the ever-present dangers and uncertainties associated with the professions (Ford, 2003, as cited in Franzoi 2005). However, each profession possesses unique dangers and uncertainties that allow for a
unique culture. These cultures then promote competition, especially where there may be an overlap in duties.

Although cited by survey respondents only approximately 12% of the time, the issue of politics and culture was raised by every interviewee, regardless of agency background, and by all focus groups. Perhaps only underlying themes, they have a link to all others and are very emotional in nature. There are a wide variety of extremely subjective opinions among E1Rs of all agencies, and it is exactly that which causes significant hindrances and roadblocks to interoperability and collaboration.

E1R agencies are not stand-alone entities. They all answer to someone within a political sphere. In the City of Ottawa, OFS and OPaS are part of the Emergency and Protective Services department. The OPS reports to the Ottawa Police Services Board. As a result, there is regular scrutiny of all decisions. This is especially true of annual budgets, which have an effect on day-to-day operations, staffing, equipment, and training. Every theme identified in this research costs money, due to the related measures of staffing and training. Budgets are always limited, and the competition for funds results in political decisions that could have direct ramifications on frontline operations. As indicated by a focus group participant, “The challenge will always be that these [disasters or significant emergencies] are high risk, low frequency events” (PF1). Kapucu (2008), who called them “low-probability events” (p. 246), as their probability to occur is either “very low or unknown” (p. 246), supported this assertion.

Partly due to the cost, current training and preparation for these types of events is disjointed. There is training to some degree, but some of it may be substandard, such as the “pick and click” online type described by one focus group participant (PF3). Without continuous training or opportunities to apply it, what is learned is also quickly and easily forgotten. Then, as
stated in a focus group, “Something bad will happen, we will get a bunch of money, and the training can begin again,” almost as a knee-jerk reaction to the “flavour of the day” (PF1). It becomes challenging to continue the momentum within any organization that wishes to maintain its staff’s skills, especially when even the recipients of the training may be thinking, “When is this [scenario] ever really going to happen?” (PF1).

In operational organizations, such as E1R agencies, where there is a distinct separation between operational and executive staff, there is a tendency for operational staff to believe that the executives have “forgotten where they came from,” especially where they have risen through the ranks. Typically, E1R agencies promote from within and do not rely on direct entries, especially at the executive ranks. Although there are exceptions to this rule, when filling an executive rank with an external direct entry, there is a significant chance the person has held a similar rank in another E1R agency. For example, chiefs recruited from the outside likely held either the same or a slightly lower rank in their previous organization. Rarely are lower-ranking executive positions filled by someone from the outside. Similarly, unlike the military, there is no officer candidate training whereby someone enters an E1R agency at a commissioned rank. Thus, the majority of executives within any given E1R agency have risen through the ranks internally.

Within any organization, upon achieving promotion to a certain level, a person’s job description and focus change considerably. As one rises through the ranks, especially to the executive levels, the primary focus becomes the bottom line. Survival is all about money and how it is spent. One common opinion with respect to the omnipresent existence of politics within E1R agencies is what one survey respondent described as “the money pie.” Depending on how budgets are established, financed, and approved, they may give more authority or control to one
organization over another (Pa4). Budgetary issues also influence the internal hierarchies that affect the front line by, in turn, influencing operational decisions. As a result, some E1Rs may find themselves in the position of not wanting to upset their bosses, which can have a direct impact on common sense (Pa4).

Although many people are fortunate or dedicated enough to rise through the ranks, more are not. Quite often and quite acceptably, this is by choice. Equally common and acceptable are those who aspire only to rise to a certain rank and wish to go no further. There are also those who feel they deserved a promotion, but did not get it. In addition, there are those who, having been promoted, are believed by many others not to have deserved it. These are circumstances that create a distinct separation between operational and commissioned ranks.

When politics and cultures clash within and across organizations, attempts at interoperability or collaboration are severely hindered. Politics and culture will never be completely eliminated and will always arise at the most inopportune of times. However, in an age of necessary collaboration, especially among E1R agencies, every attempt has to be made, both internally and externally, to mitigate the effects of politics and culture.

**Study Conclusions**

An in-depth analysis of the themes and subthemes that have emerged from the research has resulted in the development of the following conclusions:

1. E1Rs who respond to the same scenario, major or not, are not aware of or do not understand the operational SOPs of the other agencies with which they are responding, resulting in confusion, duplication, and wasted effort.

2. The continued existence of agency silos is counterproductive to interoperability and collaboration on all levels.
3. Training is the common denominator in all issues of interoperability and collaboration and must be addressed at all levels to ensure any measure of success.

4. Middle managers and effective leaders are critical to the success of any interoperability or collaboration program.

5. Communications within and across E1R agencies are essential for critical information sharing and a coordinated, effective response to any major situation.

6. Politics and culture are historical in nature and have traditionally, perhaps by design, hindered interagency interoperability.

**Conclusion 1: E1Rs are not aware of other agencies’ SOPs, resulting in confusion.**

E1Rs who respond to the same scenario, major or not, are not aware of or do not understand the operational SOPs of the other agencies with which they are responding, resulting in confusion, duplication, and wasted effort. Participants identified the issue of each agency having unique SOPs as the most pressing. Although SOPs are critical in process-oriented operations (Fazzi, 2007), they are not necessarily policy (PF1, PF2). Clarification as to what should take place versus what can take place in any given situation must be realized. Equally critical is that organizations that work closely together are intimately aware of such clarifications not only within their own organizations, but across the others as well.

Major emergencies have become known for having one thing in common—their “un-ness”; i.e., unexpected, unprecedented, and unmanageable (Hewitt, 1983, as cited in McMaster & Baber, 2012). As a result, there is no way that any one responding agency can be expected to have all the answers or, indeed, know all the facts. McMaster and Baber (2012) stated that “effective cooperation across agencies requires more than merely the exchange of information and that developing shared understanding is a crucial, but labour intensive, process” (p. 47). In
order to develop shared understanding, it is critical that each agency has a basic understanding of
the others’ operational SOPs.

In examining preparations for intensive care units’ and hospitals’ responses to a mass
casualty event, Joynt et al. (2010) proposed that “the health care system, individual hospitals and
ICUs [intensive care units] within them should act as a single integrated unit to maximize their
efficiency” (p. S22). In some North American urban communities, such as Kalamazoo,
Michigan, and Sunnyvale, California, the complete integration of E1R services is gaining in
popularity (Giffune, 2013; Romney, 2013). There, all E1Rs are cross-trained in all three
disciplines and daily carry with themselves the tools and personal protective equipment of each,
regardless of their function on any given day. While operating as a single unit may not be
possible for the E1R agencies of a major urban centre, certainly more integration can serve to
break down barriers of misunderstanding regarding one another’s SOPs. Thus, if a significant
measure of the integration suggested by Joynt et al. (2010) could be achieved, the result would
be good systematic coordination and collaboration.

**Conclusion 2: Silos are counterproductive to interoperability on all levels.** The
continued existence of agency silos is counterproductive to interoperability and collaboration on
all levels. When organizations or even departments within organizations operate in silos, it often
generates turf battles and protectionism that result in a complete lack of trust among the
individuals involved and their organization. Operation in silos is often an outcome of history,
politics, and culture. Thus, in order to get beyond this type of behaviour, a paradigm shift within
and across agencies is required. This will not happen overnight.

The first step to the elimination of silos is the desire to actually do so. Of the survey
respondents who indicated that operation in silos was a hindrance to interoperability and
collaboration, 73% identified personality traits such as being respectful, professional, and a team player as required to break through the silos. It is obvious that Ottawa E1Rs desire to break out of operating in silos.

By virtue of the fact that E1R agencies operate under specific mandates, silos will always exist to some degree. E1Rs have specific roles that, while they often can overlap, also dictate that certain individuals perform specific functions that others should not or do not perform. However, depending on who arrives at a particular event first, any E1R may perform the functions traditionally undertaken by E1Rs from the other services. This is the dynamic reality of emergency first response, and it speaks to the underlying desire of all E1Rs to serve the public they are sworn to protect. Understanding this dynamic and the potential fluidity of one another’s roles is another significant step to eliminating silos.

In organizations that exhibit silo mentality, insularity, redundancy, and suboptimal decision making result (Rosen, 2010). These ultimately cause knowledge and, in some cases, confidence vacuums. They often present themselves at the most inopportune time: the immediate response stage. Such disorganization becomes evident not only to the responders themselves, but also to anyone witnessing such disarray, resulting in confusion and possible inaction, which can be an added danger in an already dangerous and confusing situation.

**Conclusion 3: Training must be addressed to ensure any measure of success.**

Training is the common denominator in all issues of interoperability and collaboration and must be addressed at all levels to ensure any measure of success. All of the findings, conclusions, and recommendations in this research have a link to training. Training within the E1R environment is ongoing and virtually constant. It starts at the earliest junctures, in many cases before a potential member is even recruited. It continues through mandated adequacy standards until the member
retires. To be promoted, assigned to special squads, or even transferred to different sections, a member requires training. In operational professions such as E1Rs, there are always improvements in equipment and new or better ways to perform the functions required. All of these aspects require further training.

In the open-ended survey questions that asked “what went well or not with respect to interoperability and collaboration” and “what aspects to success or hindrances exist towards it,” the requirement for training was mentioned over 80 times. Furthermore, every interviewee from all services and every focus group identified aspects of training or its absence as being vital to the success or failure of interoperability and collaboration. Most important, interviewees who were members of specialty squads and who had benefitted from cross-training identified that experience as being the sole reason for the breaking down of barriers and the prevention of operating in silos (Pa1, Pa2, P1, P3, FF2, FF7, CFG2, CFG3, CFG6). This was also referred to by many survey respondents.

Training with respect to interoperability needs to commence at the earliest possible juncture, identified by many interviewees as the prerecruit, community college level, where a “mindset would be developed coming in, where ‘we set the bar high and keep it high’” (Pa6). Currently, the type of training offered at this level, while commensurate with individual agency requirements, does not address the issue of interoperability or collaboration. Indeed, participants specifically identified it as actually contributing to the hindrances associated with interoperability. One interviewee described being present during a lecture where a paramedic instructor indicated that anyone who was a volunteer firefighter was simply a “hose monkey” and that OFS should be ignored at scenes. The instructor also stated that those taking the Police Foundations training were not really “going to be cops anyway” (Pa1). Not only is such
instruction blatantly unprofessional, it serves to create the very things that proponents of interoperability and collaboration are trying to break down: silos, animosity, resentment, and misinformation, to name just a few.

As it currently stands, there is a significant lack of cross-training initiatives available to the frontline E1R. Despite the fact that frontline members respond and work with one another on a daily, if not hourly basis, few enterprises for any sort of combined training exist. Of 50 responses to an open-ended question that asked for further input on the survey taken, 20 indicated a desire or a need for cross-training among E1Rs in Ottawa. Moreover, all interviewees and focus group members agreed that cross-training is absolutely vital to forward thinking and holistic approaches to interoperability. Such initiatives are not only required for the frontline staff, but also for middle managers, who, as previously identified, must be the driving force for any paradigm shift that encompasses holistic approaches to collaboration.

**Conclusion 4: Leaders are critical to the success of any interoperability program.**

Middle managers and effective leaders are critical to the success of any interoperability or collaboration program, because their ability to liaise between upper management and the operational member is of the utmost importance. Leadership and command have been identified as one of the most critical factors in crisis response (Flin & Arbuthnot, as cited in Devitt & Borodzicz, 2008). This is largely because of the paradox that is presented by modern-day emergency management: it requires meticulous planning, yet, with respect to response, it is completely spontaneous (Waugh & Streib, 2006). In its assessment of the response to Hurricane Katrina, the U. S. House Select Committee quoted the 9/11 Commission Report, which indicated that on 9/11 the overall response’s “most important failure was one of imagination” (U.S. House Select Committee, as cited in Waugh & Streib, 2006, p. 135). The committee determined that the
main failure in the response to Hurricane Katrina was initiative, and stated, “There is, of course, a nexus between the two—leadership—which requires good information . . . a coordinated process for sharing it . . . and a willingness to use information—however imperfect or incomplete—to fuel action” (U.S. House Select Committee, as cited in Waugh & Streib, 2006, p. 135).

To respond effectively to a disaster or a significant emergency, the leadership of that response must be considered at all stages, including preplanning and follow-up recovery. This is especially true in a multiagency response (Devitt & Borodzicz, 2008), because it is no longer about simply handling the situation, but also about the qualitative contributions that individual professionals can make (Boin & Lagadec, 2000). The problem remains that many organizations are hampered by their continued operation in silos and their misunderstanding of one another’s SOPs. The elimination of such constraints requires a paradigm shift by many.

When organizations face the prospect of any type or degree of paradigm shift, a buy-in has to come from all levels. This is true of those at executive levels, who have the ability to proceed with the shift by driving policy and procedure. However, in an operational organization, where frontline staff perform most of the actual tasks associated with that organization, the buy-in of those on the front lines is essential. The problem is that this buy-in is hardly assured; hence, the need for the middle manager or, more importantly, the leader.

Operational organizations rely on middle management leadership for two distinct reasons: first, to promote the mission, values, and the strategic goals of the organization, and second, and equally important, to lead the frontline staff along the necessary course of the organization’s strategic plan. Many a military officer will attest that successes in battle are due to the abilities of noncommissioned officers (NCOs): their warrant officers, sergeants, and
corporals. The NCOs are the liaison between the officer’s strategic plan and its application by the soldiers, or enlisted men. The NCOs have to buy into the program and be able to sell it to the troops. Where this has not been possible, the plan was often destined to fail. Thus, the two-way street walked by middle management is essential to the success of operational organizations.

**Conclusion 5: Communications within and across E1R agencies are essential.**

Communications within and across E1R agencies are essential for critical information sharing and a coordinated, effective response to any major situation. Most often, research concerning interoperability within the realm of DEM involves the issue of communications across and between agencies (Boyd, 2005; Brito, 2007; DHS, 2011; Engebretson, 2007; Hawkins, 2007; Jenkins, 2006; Public Safety Canada, 2012). There are many aspects to communications, not the least of which is the need for a common language. Indeed, one of the most prominent aspects of the IMS is that the adoption of a common language among E1R agencies and anyone else responding to a disaster is essential (Emergency Management Ontario, 2008; Federal Emergency Management Agency, 2006; FIRESCOPE, 1994). This research has shown that nomenclature is a direct hindrance to interoperability and collaboration within Ottawa.

Each of the three E1R agencies in Ottawa operates its own communications centre with its own nomenclature, which is not compatible with any of the other’s. In addition, the OPS communications centre operates and manages the 911 system for the city, relaying calls, as required, to the OFS or OPaS through their respective communications centres. This alone can create a sense of superiority that can ultimately damage relationships. A 911 call taker is able to enter a call for service directly into the police dispatch system. All calls for the other services are routed as required. Present policy dictates that once directed to and answered by the receiving communications centre, the 911 operator must release the line. In the event that police response
may also be required, the receiving communications centre then has to recontact the police communications centre to exchange the necessary information. Such duplication of action is convoluted and inefficient, often resulting in confusion. Information exchanged between three agencies, which require different information, through three radio and computer systems, to three types of responders naturally and frequently results in inaccurate information. This is not only confusing with respect to sorting out the situation at hand but, depending on the severity of the situation, may present significant danger for responders and the public alike, due to the confusion surrounding applicable information.

A secondary inefficiency identified with respect to individual communications centres is that staff do not necessarily understand the exigencies of the other agencies and therefore do not ask the questions that may be a requirement of the other agencies. In some circumstances, either internal policies or those of external oversight entities prevent certain questions, such as those of a personal nature, from being asked (CC1). In many cases, those questions are asked nonetheless, but there is always the risk that an external audit will censure such practices. Typically, the training received by staff is job specific with respect to entering calls and working with the system provided and radio protocols, but involves little exposure to the type of environment in which calls operate: law enforcement, firefighting, or paramedical. There is no cross-training or exposure to the other agencies’ protocols or SOPs (CC1).

**Conclusion 6: Politics and culture have hindered interagency interoperability.**

Politics and culture are historical in nature and have traditionally, perhaps by design, hindered interagency interoperability. Interaction and cooperation between any two organizations, regardless of industry or size, cannot take place without politics being involved. Often considered the great evil, politics often centres on budgets. Like the other previously identified
themes, politics and culture have both vertical and horizontal elements. Thus, they will always be present and may often impede progress to a significant degree. In the sphere of public organizations, such as E1R agencies, the existence of political interference can be more pronounced.

The basic functions undertaken by paramedics used to be the purview of the fire department. As a result, in many jurisdictions in the United States, fire departments have integrated paramedics and work directly with them. Indeed, some members are completely cross-trained and can function in either role depending on the exigencies of a given day or scenario. This has not been the case as frequently in Canada and, indeed, in Ontario. Paramedics were initially under the auspices of the Ontario Ministry of Health and, upon downloading of services to many municipalities around 2000, were made part of municipal emergency management or protection departments. Therefore, in Ottawa, the direct competition between the OFS and OPaS is a recent phenomenon.

From the perspective of the fire service respondents, the consensus appears to be that they were more than happy to allow paramedics to take over the medical calls that they used to take. Almost all respondents, both those interviewed and those in a focus group, indicated that they would rather “be fighting fires” (FFF1). However, what they often found was that paramedics did not respect their level of training and expertise and would not even interact with them at medical calls. In focus groups, firefighters described situations where they had been “waved off by a paramedic doing chest compressions” (FFF2) and had been released from a scene by paramedics who had yet to arrive at a call regarding a heart attack (FFF1). In addition, firefighters related situations where, upon having arrived at a scene first, they had information to
offer arriving paramedics, but were simply ignored as the paramedics walked right by them (FFF1).

Paramedics, on the other hand, had their own stories with respect to firefighters. For example, an interviewee indicated that firefighters appear to make their own assessments of situations while either not respecting or not allowing another responding agency to make theirs (Pa2). At a cliff-rescue call, a firefighter asked an arriving paramedic if a basket was required to bring up the injured party. When the paramedic indicated it was not yet known, the firefighter asked why not (Pa2).

Survey respondents noted that one of the problems with respect to politics and culture is an agency’s understanding of other agencies’ functions, policies, SOPs, or even beliefs. Partly due to agency cultures, such understandings often develop lives of their own, which might be downright erroneous. They often become a political roadblock to progress. One survey respondent went as far as to say, “The fire chiefs have a publically stated mandate to ‘take over’ the work of paramedics as means of budgetary and job preservation.” (I found no such publically stated mandate.) However, as another paramedic interviewee claimed, “EMS thinks fire has it too good, and vice versa” (Pa2), which often results in each agency trying to steal the other’s thunder, while competing for the same source of funding. This sort of competition was described by a focus group member, who said, “We’re trying to phase out fire on almost everything,” and advised that on paramedic trip sheets there is even a section to be checked off if a responding paramedic “beats” police or fire to the scene (PaF2).

This sort of turf building and protectionism exists primarily between the OFS and the OPaS. This research has shown that this is mainly due to the infancy of paramedics as a profession, certainly in Ottawa. Paramedics have existed in Ottawa only since 1995, with the
introduction of both primary and advanced care paramedics (Pa7). As a result, there is a broad opinion both within and outside the OPaS that paramedics are still trying to “find our way” or “trying to make a name for ourselves” (Pa1), and they are often seen to be stepping on the toes of other services. As one survey respondent stated, “Paramedics want to make themselves more indispensable and tend to overstep their boundaries . . . [and] their administration works diligently to try and provide expanded services that already exist from other agencies.” Indeed, according to a paramedic interviewee, “We have a chip on our shoulders. . . . We don’t even know what our own roles are yet” (Pa1). This was echoed by a police interviewee who claimed that paramedics need to “defer to the expertise and powers of the other agencies” (P4) and supported by a firefighter who contended that paramedics are “a support agency who are never going to have overall command” (FF5). That said, the firefighter specified that while there may be animosity, it does not preclude the vital role of paramedics in any major situation.

Such animosity does not appear to be pandemic within either organization, but there is no doubt that, primarily due to history and blurring of roles, it exists. What is unfortunate is that it appears attitudes about other E1Rs are being developed from the earliest stages of exposure to other professions. A firefighter interviewee who had the unique perspective of having been at one time employed in all three E1R capacities indicated that he had been present at a postsecondary paramedic program where instructors advised trainees that at any given scenario they would likely be “on their own” to do whatever was required. Instructors also advised that a couple of “stupid lunkhead hose monkeys” may be available to help lift a gurney into an ambulance (FF7).

There is a common theory among E1Rs that 20% of the clients with whom they deal cause 80% of the problems they encounter. It stands true that the same formula could be applied
to those who propagate attitudes, cultures, and politics of the nature described. The resentment created by such opinions can be palpable and make true interoperability and collaboration ephemeral. As public organizations that are scrutinized through political and social lenses, E1R agencies will always be subject to a measure of political intervention. In conjunction with cultures due to the structures under which E1Rs exist, and the competition for limited budget funds, these issues are indeed pressing. While it may never be completely resolved, a paradigm shift within and across agencies is required to mitigate, through recognition of their existence and attention to their effects, their influence and pave an easier path to increased interoperability and collaboration.

Chapter Summary

In this chapter, I summarized the findings and conclusions generated through the two-part survey, one-on-one interviews, and focus group responses. The purpose of this research project was to discover the gaps and propose solutions that would enhance the interoperability and collaboration of frontline E1Rs responding to a significant disaster or emergency within Ottawa. Through the research data obtained through the methods indicated, I have identified six critical themes that hinder interoperability and collaboration. These themes are SOPs, silos, training, leadership, communication, and politics. Each theme contains its own subthemes from which the gaps emerge and further show that the major themes are interrelated. To bridge the gaps in question, it is essential to address the themes both individually and collectively. Should they be left to continue to exist in the historical way in which they have, then a robust emergency management response protocol in Ottawa shall remain elusive.

In a major emergency or disaster, all E1R agencies will respond at the same time. Without proper coordination, which would come as a result of efficient collaboration and
interoperability, such response will continue to be substandard, resulting in unnecessary and further damage, injuries, and fatalities. Attention to and elimination of as many of these gaps as possible is a positive first step towards a robust emergency response protocol, which is arguably the most important pillar of DEM.
Chapter 5: Recommendations and Research Implications

The purpose of this major research project was to determine the level of interoperability that currently exists within the three major E1R agencies in Ottawa and the gaps that hinder interaction between them. In the previous chapter I explained the findings and conclusions of the action research project. Based on these findings and conclusions, in this chapter I make recommendations to bridge or overcome the identified gaps.

Key characteristics of interoperability are the exchange of information and its subsequent use. The degree of interoperability is determined by how useful any actions undertaken or communications exchanged between the parties were; in fact, true interoperability “requires the ability of one to use what it receives from the other or conversely the ability of other to interact with the one according to the rules of interaction of the one” (Diallo, 2010, p. 56). Although the E1R agencies in Ottawa operate in conjunction with one another, given their current cooperation levels, it would be erroneous to consider such action interoperability (Diallo, 2010).

A police focus group discussed the criteria that constitute a major emergency requiring interoperability and collaboration. An answer agreed upon by all members was, “Any event that employs two or more services for a time period exceeding 60 minutes” (PF1, PF2, PF3, PF4). In my research, I could find no protocol or policy of any organization that would directly answer this question, but the one offered by those with significant operational experience as E1Rs appears to be appropriate. An event such as this would invoke protocols requiring the dispatching of multiple personnel from each agency, including leadership, and would further require communications between responding agencies and more than likely the setting up of a command post. Thus, all the concepts identified for effective interoperability and collaboration would be required.
As noted above, all the findings listed in Chapter 4 that either contribute to or hinder interoperability and collaboration are interrelated. One cannot be addressed without impacting several, if not all, others. Because of this interrelationship, it is necessary to view and address the recommendations as they relate to one another. These recommendations are listed below and discussed in more detail. I then further indicate how they could collectively contribute to increased interoperability among E1R agencies of Ottawa, as opposed to simple interoperation.

Study Recommendations

1. A standing committee of operational members from each E1R agency should be struck to examine the operational SOPs from each agency.

2. The training branches of each agency should form a working group to assess the level of interoperability and collaboration training offered to operational personnel.

3. The training branches of each agency should coordinate with Algonquin College’s Police and Public Safety Institute (PPSI) to establish necessary curricula for prospective student recruits that encompass the notions of multi-agency interoperability and collaboration.

4. Upper management of all three agencies should promote the leadership of middle management as the driving force for effective interoperability and develop minimum training and accreditation standards at this level.

5. Each agency should commit to the idea of a combined communications centre that, while maintaining individual operations, develops unified protocols to address a significant disaster or emergency.
6. Each agency should commit to the collective mitigation of political and cultural influence in continued interoperability and collaboration by partnering with the City of Ottawa, the Office of Emergency Management, and Operation INTERSECT.

**Recommendation 1: A standing committee should be struck to examine SOPs.** A standing committee of operational members from each E1R agency should be struck to examine the operational SOPs from each agency. Organizations do not institute SOPs just for the sake of it; they do so for very specific reasons. Unfortunately, the exigencies of one or another organization responding to the same event are often not taken into consideration. The “showdowns” regarding SOPs, because they were not previously understood, known, or recognized, often play out at the scene of a major emergency.

Participants identified the issue of each agency having its own SOP as the most pressing. SOPs are critical in process-oriented operations (Fazzi, 2007) and clarifications as to what takes place, on the part of any particular responding agency in any given situation, must be realized. Equally critical is that organizations that work closely together are intimately aware of this not only within their own organizations, but with other agencies with which they regularly interact. Thus, the first and arguably most important recommendation of this research is that a standing committee, with members from each agency concerned, be struck with the goals of identifying the significant gaps between one another’s SOPs and ultimately reaching consensus on how to address them.

The committee should include current frontline operational members, including those in leadership or middle management roles. Rank, however, should play no role at all, and committee members should examine the SOPs through the lens of their own experience and knowledge to allow for open dialogue, without prejudice. In the context of this committee, a
scenario should be identified that could be considered a major incident to which the response of all three E1R agencies would be required. Such interaction would allow the committee to determine what aspects of any SOPs are relevant to their own agency and offer suggestions in order to improve the functionality and understanding of SOPs across all agencies.

An example of an SOP of concern, identified by interviewees and focus groups, involves the positioning of vehicles at a major response incident. The OFS has strict protocols with respect to the staging of its vehicles. These SOPs exist for a number of reasons, not the least of which is placement of and protection for main line hoses to battle major fires. However, as indicated by a paramedic interviewee, paramedics are the only E1R agency that arrive and depart from a major scene in a priority one status (Pa8). Depending on the location of the patient and the patient’s condition, paramedics will require facilitated access to and egress from the scene (quite possibly the inner perimeter), in order to save precious minutes. By virtue of OFS’s protocols, paramedics report that OFS vehicles have blocked their ingress or egress, wasting those valuable minutes. Ignorance of, or even blanket adherence to, the SOPs on the part of anyone in either agency can result in further injury or property damage.

Just such a scenario took place on May 26, 2011, when during shop class at a local high school, a 55-gallon drum exploded as a student attempted to cut it open with an acetylene torch. OFS vehicles, mustered according to their SOPs, obstructed paramedic access and egress routes. Other agencies either did not know or did not understand these SOPs. Whether such obstruction contributed to the ultimate fatal injuries sustained by the student is outside the scope of this research. However, it caused great concern for some of the paramedics who were on the scene (Pa8).
Such an agency SOP can have an impact on a number of scenarios, especially where it involves a multiagency response. In survey responses, interviews, and focus groups alike, E1Rs mostly agreed that the type of call to which all agencies respond the most often is a major motor vehicle accident. The positioning of vehicles at this type of a scenario can have incredibly adverse effects on the outcome of the situation if the exigencies of all agencies are not taken into account or understood. Looking at a commonly identified call to which all agencies respond, the committee would identify what priorities each agency has with respect to the scenario, explain their SOPs appropriately, and potentially develop new SOPs that accommodate the exigencies of all or as many agencies as possible.

This has already been attempted by the OPS with respect to fatal accident investigations. In 2010, according to an interviewee, an effort to educate both OFS and OPaS members with respect to the police approach to and requirements at fatal accidents was met with resistance from OPaS for an unknown reason (P2). Ultimately, the attempt failed despite the fact that the slideshow presentations prepared for OFS and OPaS members contained exactly the information required to educate other E1Rs as to the requirements of a police investigation into virtually any major scene (P2).

The time wasted as a result of ignorance or misunderstanding of one another’s SOPs can have catastrophic effects. Thus, the standing committee would be able to scrutinize all SOPs through a more holistic lens and accommodate as many as possible to the best possible degree. If any conflicts remained, the committee could recommend protocol for resolving them as quickly and seamlessly as possible. For example, in the case of staging of vehicles, if one required moving, it could simply be moved slightly, without needing the approval of a supervisor. Any recommendations suggested by the standing committee would be submitted to the executive
levels of each service for review. It is hoped that, having supported the establishment of the committee, executives would then endorse and implement the committee’s recommendations.

**Recommendation 2: A working group should assess interoperability training.** The training branches of each agency should form a working group to assess the level of interoperability and collaborations training offered to operational personnel. Training has many aspects both within and across agencies and was identified as one of the most important themes that hinder interoperability between E1Rs in Ottawa. Virtually all the aspects that interfere or hinder interoperability and collaboration identified in this research can either be fixed or be supported by training. Whether the training is with respect to agency SOPs, cross-training, leadership, or action-specific training, it is easily the common denominator.

Recruit training for E1Rs in Ontario has been well established for some time. Both policing and firefighting have dedicated colleges in Ontario, and all three disciplines now have established programs for potential recruits at the community college level. The Ontario Police College is located in Aylmer, approximately 50 km southeast of London, while the Ontario Fire College is located in Gravenhurst, approximately 200 km northwest of Toronto. Currently, police recruits for the OPS attend a 14-week training course at the Ontario Police College and continue with further in-house training at the OPS Professional Development Centre located at Algonquin College of Applied Arts and Technology. OFS does not send recruits to the Ontario Fire College and instead trains them at one of three internal locations within the city (FF6). Paramedics receive certification through programs offered at the community college level and receive ongoing training locally as well.

Training is not taken lightly by any of the three organizations. However, it is conducted in silos. Police train the police, firefighters train firefighters, and paramedics train paramedics;
they never meet, unless as part of a strategic specialty squad. While I was a police officer, I never took training with a firefighter or a paramedic, yet many of the courses I took could easily have been integrated: media relations, effective communication, leadership, and supervision, just to name a few.

E1Rs in Ottawa, especially OPS and OFS, are fortunate that they have robust training centres within the city. OPaS possesses a recently built headquarters that incorporates training capabilities for its members. All three are equally fortunate in that they have members dedicated specifically in training roles for their organizations; thus, their respective ability to provide training is second to none.

Therefore, I recommend that the training branches of each agency form a working group comprised of instructors and supervisors to determine the feasibility of integrated training between E1R agencies in Ottawa. Many levels of such training would exist, but it should start at the recruit level for each organization, which was a common opinion among all interviewees and focus group members. At the very least, this training should comprise of a minimum one-day’s exposure to the other organizations, which would allow for understanding of and training in one another’s SOPs, organizational and rank structures, and service delivery models. This way, operational E1R recruits would have a basic comprehension of the other organizations with whom they will work closely, potentially on a daily basis.

Continuing training in adequacy standards and regulations that affect each agency should be conducted at least once per calendar year. The working group would identify the issues that are common to multiagency response and, as most of it can be conducted within a classroom or lecture theatre setting, it would not be cost prohibitive. E1R agencies are subject to continual revision of their operating procedures due to either technical advances or legal decisions, such as
inquests or commissions. Thus, if there are any critical updates that one organization must adopt that affect the other organizations, such cross-training and cross-communication would be made possible.

This working group should also examine specific training opportunities such as IMS. Emergency Management Ontario (2008) offers certification in the IMS up to the 200 level. Ottawa’s E1R agencies have adopted IMS as a model to ensure effective response to major disasters or occurrences (Bordeleau, 2011); however, it appears to have been undertaken only at the more strategic rather than tactical levels. An exception to this is within the OFS, where this model has been applied to most of its responses for many years. In order to bring frontline members of both the OPS and OPaS up to speed, all current frontline responders should be certified to IMS 100. This training can be undertaken at a classroom location or self-directed through online instruction, taking only about 2 to 4 hours to complete (Bordeleau, 2011).

IMS training is hardly the only specific training opportunity that the working group should consider. Many survey respondents indicated a desire to be able to go on “ride-alongs” with other agencies, to better understand what a day walking in the other’s shoes was like. This certainly reflects a paradigm shift with respect to organizational behaviour; however, it need not be as logistically impossible as some may make it out to be. For one thing, it does not have to involve all members. Those exposed to the other agencies would share their experience with peers, which would naturally start to break down barriers. Simply stated, by virtue of building personal relationships and understanding the makeup of other agency’s vehicles, future interaction at scenes would go a lot smoother. The knowledge exchange would allow for better understanding of one another’s working environments.
Across survey respondents, interviewees, and focus groups, the desire to participate in mock disasters was high. These are highly technical training opportunities and require considerable planning and cost. Similarly, while not quite as consuming of resources, the same can be said of dynamic tabletop exercises. However, it is vitally important to explore both these opportunities as often as possible to ensure that the proper levels of staff are trained. While important at the management or strategically involved staff levels, tabletop exercises should not be exclusive to them, which appears to be the case for the most part.

The logistics involved for these types of training are significant, and the training cannot be conducted on an annual basis or provide everyone with the opportunity to participate. However, a potential schedule of a full-scale mock disaster once every 5 years, and significant tabletop exercises once every 2 to 3 years, would provide effective disaster training involving all E1R agencies, affording significant collaboration and interoperability understanding.

On a more frequent basis, having determined what aspects of interoperability and collaboration are most important, the working group could develop smaller tabletop exercises that individual agencies could offer staff at platoon or section levels. Given a scenario, members could role-play as police, firefighters, or paramedics, regardless of the agency to which they belong, and conduct the exercise. Representatives of the other agencies could be present at this type of training to provide feedback during and at debriefs of the exercises.

Another unique state that exists within the E1R community at large is that many, prior to their current employment, have been certified in the requirements of other E1R functions. This may be due to education or previous employment, as many E1Rs have worked at one or more agencies. Many members, more commonly firefighters and paramedics, maintain their cross-qualifications. Unfortunately, these qualifications are not recognized by many frontline workers.
For example, several firefighters remain qualified primary care paramedics and are far more knowledgeable in responding to medical calls than many of their peers within the fire and certainly within the police services. Yet, upon the arrival of paramedics, they are totally ignored and literally pushed out of the way so that paramedics can take over medical assessment of the patient (FFF1, FFF2). Discounting such qualifications and abilities only does a disservice to the public to whom E1Rs are sworn to serve. Thus, the working group should establish the numbers of cross-qualified members within all agencies and develop an identification strategy, similar to a rank insignia that can be easily understood by all E1Rs. Such insignia, authorized to be worn on uniforms, could identify a person as qualified in a specific area.

The establishment of such a program would require development of further protocols that allow for such deployments and actions, but may limit their reach. For example, should it be determined necessary, qualified advanced care paramedics, who respond to a situation as firefighters, could conduct any action up to the actual “pushing” or delivery of narcotics. They could read electrocardiogram tapes, take and assess vital signs, find veins and insert IV needles, or select and set up the required narcotics. However, due to their response to a particular scenario as firefighters, they could not actually administer the drugs, unless expressly ordered to do so by the on-scene advanced care paramedic. Such a situation would require unified reporting protocols, among others. Regardless of any protocols developed by the working group, the existence of cross-qualified personnel should be accepted as a unique and valuable resource that should not be ignored.

There are endless opportunities for enhanced training within and across E1R agencies. The key, once again, is that collaboration is a priority in this type of training. This represents a paradigm shift for the organizations concerned, as integrated training has never been the norm.
However, especially in Ottawa, the facilities exist for robust programs to be established. Specialized teams such as the ESU, Tactical Team, and Underwater/Water Rescue Squads already engage in significant amounts of cross-training. Such training should also be developed for the front lines as, without exception, the survey respondents, interviewees, and focus group members who had been so exposed at the more strategic level overwhelmingly indicated that significant barriers were broken down as a result (Pa2, FF4, P3).

**Recommendation 3: Training branches should coordinate with the PPSI to establish curricula.** The training branches of each agency should coordinate with Algonquin College’s Police and Public Safety Institute (PPSI) to establish necessary curricula for prospective student recruits that encompass the notions of multiagency interoperability and collaboration. The PPSI offers programs in all three disciplines of E1R (Algonquin College, 2013). However, there is no interrelated education between them. The OPS Professional Development Centre, located in the same building at Algonquin College, has a unique opportunity to take a leading role in brokering cross-training opportunities within the programs. The training branches of OFS and OPaS should also support such a role.

Interview and focus group participants unanimously agreed that cross-training initiatives should start at the earliest possible opportunity. For most aspiring E1Rs, this would be at the community college level. The programs at this level are intense and last between three (fire) and four (police and primary care paramedic) terms. Algonquin College offers a further 1-year/2-term Advanced Care Paramedic program (Algonquin College, 2013). This gives the training branches of Ottawa’s E1R agencies an exceptional opportunity to engage in dynamic training of potential recruits. The advantages would be plentiful in that even if students were unsuccessful in
obtaining employment in Ottawa, the prospect for their consideration for employment elsewhere would be enhanced.

This working group should liaise with Algonquin College, which has several part-time active E1R instructors, to align training aspects at both student and professional levels. In this way, the continuation of training for those students who are ultimately successful in their career aspirations will be virtually seamless and will be expected by future generations of E1Rs. Indeed, support for education at the earliest junctures, even those at the elementary school level, is espoused and growing by emergency managers, as to do so would allow the concepts to become “second nature” (Kapucu, 2008, p. 252) for them.

Such training can involve exposure to virtually all aspects of interoperability and collaboration from the simple to complex. Initial classroom courses that explain SOPs, organizational and rank structures, service delivery models, and cultures can set the path for increased relationship building. These could also evolve into tabletop exercises within the individual programs and allow for role playing in order to obtain basic understanding of the other agencies. Once prospective student recruits are proficient in such role playing, the natural evolution would be to engage in more robust tabletop exercises. Planned over the course of the 2-year programs, these exercises could culminate with a full-scale mock exercise that would involve most aspects of unified response. Students would be assigned a responder role and be required to undertake their mandate and duties in conjunction with the other agencies while being directed by instructors and training branch staff acting as middle managers and incident commanders. Such a mock scenario would comprise a significant percentage of a student’s final grade. A potential added advantage could be that such a robust and involved exercise could engage other programs and industries, to provide them some exposure to the E1R world.
The ability to shape training according to the specific needs of Ottawa’s E1R agencies is a unique opportunity that should not be ignored. It provides the capacity to shape attitudes from the earliest possible juncture, which affords Ottawa E1R organizations a potential recruit pool that is forward thinking in approach and has a holistic emergency response attitude.

**Recommendation 4: Middle management should be the driving force of interoperability.** Upper management of all three agencies should promote the leadership of middle management as the driving force for effective interoperability and develop minimum training and accreditation standards at this level. Ottawa E1R agencies are fortunate that state-of-the-art training facilities are at their disposal. This presents a unique opportunity for the training branches of all three services to develop a combined leadership training course. This initiative would require the full support and endorsement of the executive level of each organization. The program developed would be mandatory for all future promotion candidates to middle management ranks and for as many existing operational leaders as possible. The program should incorporate certification to a minimum of IMS 200 within Emergency Management Ontario guidelines, aspects of interagency SOPs, plus organizational and rank structure recognition. The hallmark instructional strategy of this program would be the use of dynamic scenario-based tabletop exercises that would expose leaders to one another’s mandates and operational concepts.

Selected experienced operational leaders from all organizations should form a working group to determine operational protocol regarding leadership response to events. This protocol must support the policies and SOPs of each agency, but identify the response level, as opposed to simply the type of call, at which one can expect leadership from all agencies to attend. Therefore, in the event of a significant disaster or occurrence, not only will all responders know that they are responding, but so will their respective leadership. Leaders will know that their counterparts
from the other agencies will also be responding, thus allowing for designation of a particular agency as lead and for the establishment of command as soon as possible.

A further aspect of response protocol for leadership should be that supervisors are readily identifiable. Many frontline workers and laypeople will never understand the rank insignia of the other agencies. Many responders in supervisory roles are more easily identified by the types of vehicles they operate. For example, most OPaS and OFS supervisors operate sport utility vehicles. Yet police sergeants mainly operate the same sedan-style vehicle as responding constables. Should the OPS continue this practice, they should add the word Sergeant or Supervisor in a conspicuous location on the vehicle. Ideally, for incidents where the establishment of a command post would be required, all supervisors’ vehicles should be equipped with the green flashing light, indicating command.

In embracing these initiatives, the result would be a natural increase in shared communications or ideas and stronger relationships. Such relationship building would then manifest at street level and, regardless of whether individual leaders have met in a classroom setting prior to an event, they would be able to interrelate more effectively, quickly, and confidently in order to achieve common response goals.

**Recommendation 5: Commit to a combined communications centre.** Each agency should commit to the idea of a combined communications centre that, while maintaining individual operations, develops unified protocols to address a significant disaster or emergency. Among survey respondents, interviewees, and focus group participants there was an overwhelming agreement that some measure of unified communications is required among E1R agencies in Ottawa. At the very least, some sort of electronic interphase or connection should exist (CC1). However, a barrier to this is that currently OPaS’ communications section is
managed by the Ontario Ministry of Health. Unlike the paramedic service as a whole, it does not report to the City of Ottawa Emergency and Protective Services branch (CC1). Thus, not only does the potential for an actual link not yet exist, the OPaS communications centre operates under ministry regulations that are not necessarily congruent with those of the municipality. Some of these regulations preclude staff from asking specific questions that might be pertinent to either the OPS or OFS response to an incident (CC1).

Currently, OPS and OFS do share an electronic interphase. However, it is only enacted when a large situation presents, and it is only done through the communications centres. Operational personnel rarely realize that this connection exists, let alone can be used. The City of Ottawa does have a compatible radio system that allows operational interphase between responding agencies by switching to a specific (Interop) channel. Despite this technological advancement, its employment is exceedingly rare. The reasons for the lack of usage of this advancement are outside of the scope of this research. However, they may include the simple uncertainty of initiating such a protocol along with the fact that, by virtue of complete physical separation, communications centre personnel do not have personal relationships, and they are not comfortable enough with one another to engage operationally.

All hindrances to effective communication among the Ottawa E1R agencies point towards a unified communications centre as a resolution. Agencies in other jurisdictions that have undertaken such an endeavour have found that their capabilities have improved immensely, given that the ability to communicate in real time is the key to quickly and efficiently resolving situations (Kolender, 2000). I do not advocate for one communications centre to undertake the dispatching for all three services; rather, all three should be co-located within the same
geographical location. So as not to be unduly influenced by one agency or another, such a location should be completely independent of all three parent agencies.

After relocating and unifying these centres, improvements would be evident on several fronts. Primary among these would be the lack of undue influence of one agency or another. Each agency would be represented within the building; however, due to the separation from its parent agency, no agency would have the appearance of being more important than another. Currently the OPS communications centre is located within headquarters, the OFS communications centre is located behind one of its busiest stations, and the OPaS communications centre is located next to headquarters. The 911 centre would not be under the unique purview of any of the three agencies; rather, it should be operated as its own entity, or managed jointly by all three.

This emphasis on equality would play directly into the second area of importance: that the simple interaction of staff within the same building, although employed by different agencies, would stimulate the exchange of information and ideas. Such an integral part of collaborative operations would require management from each agency to be present within the unified centre. Their existence, alongside the front line workers, would further build relationships among all levels. In addition, the ability to offer cross-training within one geographical location would facilitate such an endeavour. When required, facilities should be in place for a major event whereby a Communications Emergency Operations Centre could be initiated.

**Recommendation 6: Commit to the mitigation of political and cultural influence.**

Each agency should commit to the collective mitigation of political and cultural influence in continued interoperability and collaboration by partnering with the City of Ottawa, the Office of
Emergency Management, and Operation INTERSECT. In order to continue and maintain a process within a predominantly operational organization, the role of the “two-way-street walking” middle manager or leader is critical. However, in order to initiate the process and establish its vitality, the engagement of the highest levels of organizations and their sustained commitment must be sought and assured.

The research has demonstrated that the City of Ottawa is fortunate in that unlike other municipalities in North America, it has been very proactive at the strategic levels with respect to DEM. The Office of Emergency Management has been an entity for much longer than most municipalities, certainly those in Ontario and much of North America. The OPS, OFS, and OPaS continue to collaborate on training of strategic teams such as the Emergency Services Unit, the Tactical Team, and the Water Search and Rescue Units/Marine Patrols. Furthermore, at the executive levels of many organizations within the National Capital Region, which includes the City of Gatineau, Quebec, Operation INTERSECT is a multijurisdictional and all-hazards initiative that involves three levels of government and their community (O’Sullivan, 2009). Members include the cities of Ottawa and Gatineau, the provinces of Ontario and Quebec, E1R agencies from both cities and provinces, as well as the Royal Canadian Mounted Police and other government public safety organizations such as the Canadian Security Intelligence Service (Operation INTERSECT, 2008). Operation INTERSECT is not intended to adjust or affect the SOPs of any member organization; instead, it is set to engage everyone in the understanding of cooperation in the event of a significant emergency or disaster within the National Capital Region (Operation INTERSECT, 2008).

The desire to be at the forefront of DEM is evident within executive levels of the E1R agencies of the City of Ottawa and the National Capital Region. However, their next
commitment must be to their frontline personnel, and this requires a paradigm shift. Although it does not report directly to the Emergency and Protective Services branch of the City of Ottawa, the OPS, along with the OFS and OPaS, should work in conjunction with the Office of Emergency Management. The office would take the lead to sponsor true interoperability and collaboration at the E1R front line. Thus, in conjunction with and supported by the office, the executive levels of the City of Ottawa E1R agencies should commit to, contribute to, and finance a permanent committee to examine, expand, and properly manage all aspects of interoperability and collaboration, especially those related to dynamic and meaningful training.

Operation INTERSECT already meets several times annually to discuss matters of importance to members with respect to DEM. The Office of Emergency Management and City of Ottawa E1R agencies must therefore engage with the rest of Operation INTERSECT to promote the patronage of frontline interoperability and collaboration, with the potential goal of expanding the necessary programs and platforms across the entire National Capital Region.

Research Implications

Based on the research findings, I have identified recommendations for action to improve frontline interoperability and collaboration. The steps of how to implement these recommendations are, first and foremost, up to the executive levels of the organizations concerned. With the proactive approach that Ottawa and the National Capital Region have taken to date, the time is now upon everyone to make sure that this proactivity is complete by ensuring that all levels of emergency first response benefit from it. This will be successful only with sponsorship of the highest levels of the involved agencies.

At the National Capital Special Operations Symposium, held on November 14 and 15, 2012, Chief Charles Bordeleau of the OPS and Chief John De Hooge of the OFS addressed the
assembled attendees and respectively stated: “Interoperability is one of the Ottawa Police’s four broad strategic priorities,” and “Collaboration is critically important to effective emergency response in the City of Ottawa.” These statements of support must be both sustained and constant, with the continued sponsorship commitment of the respective executives to such symposia and other strategies.

Thus, the first step should be that a meeting of the highest levels of municipal government and Ottawa’s E1R agencies take place as early as possible, identifying a commitment to the residents of Ottawa that their frontline first responders are going to be engaged and trained to the highest degrees of interoperability and collaboration. From there, the suggested committees and working groups should be struck to commence research into the identified opportunities. These committees and working groups should seek input from and consist of E1Rs who are truly interested in the concepts suggested, and not those engaged in simply padding their resumes.

Objectivity is key, although much subjectivity will be involved by virtue of the fact that different organizations will be involved, and their perceived self-importance within the overall solutions cannot be ignored. However, by involving people who have identified a genuine concern for the issues, objectivity will likely win the day and, as a minimum, be able to keep subjectivity in check.

Similarly, the status quo is not an option. Instant digital and social media dictate that whatever public entities do and wherever they do it will be part of the public realm a lot sooner and much more widespread than has been historically possible. Not everyone now watches the evening news, and not everyone reads the newspapers. The growing popularity of Facebook®, Twitter®, Pinterest®, and LinkedIn illustrates that anything anyone does is subject to widespread
and instantaneous scrutiny. When “anything” is emergency response and “anyone” relates to E1Rs and the agencies they represent, such dissemination will likely be far more widespread and rapid than for other entities or occurrences.

A police car, fire truck, or ambulance screaming by always catches people’s attention. Many wonder where these vehicles are going and what they are doing. Few people can pass by any scene without looking. Human nature simply will not allow that to happen. When members of the public are within camera shot of any occurrence, everything undertaken by E1Rs becomes subject to criticism in the court of public opinion. The dynamic nature of an E1R profession dictates that they must make split-second decisions. There will always be critics and “armchair quarterbacks” who will second-guess these decisions and believe that something should have been approached or conducted in a different manner. The entire event, including everything leading up to it and its ultimate conclusion, cannot be broadcast due to time constraints (of either sound bites in the media or batteries in recording devices). Thus, it is entirely possible that inaccurate snippets of information will be used to judge the entire response. In that case, the actions, professionalism, and work ethics of E1Rs need to be beyond reproach. These E1Rs must be seen to be working for the benefit of those they are sworn to serve—the general public—and not engaged in any self-serving arguments, disagreements, or misunderstandings. The E1R community must not be afraid of these concepts. In fact, they should embrace them with the ultimate goal of improvement.

Most importantly, these are all concepts that will never end. There will never come a time when E1R agencies or the municipalities for whom they work can say there is no further need for improvement, there are no more technological advancements, there is no better training or way to conduct business. Once committed to the concepts of increased interoperability and
collaboration, E1R agencies, municipalities, and regions must remain so. Some critics and
critiques will be easier to deal with than others, as will the resolution of some calls, emergencies,
and disasters. Review, scrutiny, inquests, lawsuits, Royal or other commissions and any other
method of second guessing, including and especially future research, dictate that these issues will
never go away. As a result, E1R agencies and their respective municipality must always be
prepared to reinvent themselves and stay ahead of the curve.

Chapter Summary

All the recommendations offered here are going to be expensive. The logistics for
undertaking many of them are acknowledged to be significant. Nonetheless, they are all
necessary in order to foster true interoperability and collaboration. Many of them will require a
paradigm shift of all affected agencies. However, the world of DEM has undergone such a
paradigm shift—especially since 9/11—and in light of many disasters, natural and manmade,
that threaten communities continually. E1Rs can no longer afford simply to respond the way that
they traditionally have done and hope for the best. In today’s age of technology and instant
communications, the scrutiny placed upon E1Rs and their agencies is far more significant than
ever before. Such scrutiny will always result in people believing that E1R approaches and
responses could have and should have been better. Indeed, these responses can, should, and will
continue to improve over time and with technological advancements. While response is arguably
the most important or most complex of the pillars of DEM, there is no reason why response
cannot be better prepared and continually improve in and of itself.
Chapter 6: Lessons Learned

Self-Reflection

I have spent the last 2 years of my life on a journey that I never anticipated even contemplating, let alone taking, a mere 6 months before I started it. The journey has virtually consumed me and, while that is not necessarily a bad thing, as I sit here, slouched across my chair writing this final chapter, I cannot believe that it is almost complete. In order truly to complete it, however, I must identify the lessons observed and the lessons learned. What have I observed and what have I learned?

I am right wing; however, by no means radically so. I am what I like to describe as a red tory or, perhaps a “small c” conservative—but a conservative nonetheless. I have spent 30 years on the streets of the capital city of Canada, and I have seen a side of society that most people refuse to believe even exists. It is ugly and disgusting, and it stinks, both literally and figuratively. A lot of it is hard to respect, because it does nothing to earn that respect or nothing to change its lot in life. I am a firm believer that, in general, people are where they are because of the choices they have made in their lives. Admittedly, some peoples’ choices are thrust upon them more than others are, and I always have and always will do what I can to help those people. That is why I joined the police service in the first place. They, for the most part, are the ones who make that supreme effort to change their lot in life. There are others, however, who make things very difficult. This is where I have a fundamental difference of opinion with people who are more left of centre than I am.

I like to consider myself a realist. I look at a situation or scenario and firmly believe that it is what it is for some very distinct reasons. However, what I have come to learn, more than anything else, through having engaged in the MADEM program, is that mine are certainly not
the only opinions out there. Everyone has opinions, and not all of them are congruent with mine. So, in being a realist, I would like to think, therefore, that what I have learned more than anything else is that everyone has and is entitled to their opinion. I espouse the quote commonly misattributed to Voltaire, but written in a biography of him that states, “I may not agree with what you say, but I will defend to the death your right to say it” (“Evelyn Beatrice Hall,” 2013, para. 2).

In the past, I may have argued my opinion to the nth degree, but now I will actively listen to others. I have learned that mine is not the only perspective and that others have an equally valid one. If we can, as equals, discuss our opinions and reach consensus, then I aspire to do that as often as I possibly can. I hope that people will accept the experiences that I have had and the things that I have seen as valid, and afford me the same courtesy. I am the way I am because I have been in the trenches. I have dug deep in order to help some people and change some things for the better or for the common good, yet have realized that sometimes one simply cannot. So yes, I am right wing, and I make no apologies for that. However, it is certainly not for a lack of trying. Yet, I pledge to continue to work with my peers rather than at cross purposes to them. After all, that is exactly what this major research project was all about. Change. Paradigm shifts. Moving forwards. Doing better. Improving.

Our ultimate successes may be borne out of many failures. Sir Winston Churchill said, “Success is going from failure to failure without loss of enthusiasm” (Quoteland, 2001, para. 1); he also said, “Success is not final, failure is not fatal: it is the courage to continue that counts” (Quoteland, 2001, para. 3). It is these emotions that I have learned over the course of my career and life and that have been solidified during my time at Royal Roads University. I used to think that in order to be successful, one had to go as far as possible within any organization. That I did
not is not a failure. I may have failed from time to time in things that I attempted to do, but I have ultimately succeeded as a result of having tried. My failures have made me realize that I am, indeed, a success, and that I will continue to succeed, even though I might fail.

So more than anything else, I have learned not to be ashamed for who I am, what I believe in, where I have been, or what I have done. I have observed others, and I have learned that they, equally, should never be any of those things either. Therefore, I make no apologies for who and what I am. In fact, I am proud of it, because I think it represents the realities that I have experienced. I understand, however, where others might be coming from and that their realities identify them as well. We will discuss, and ultimately, we might agree. If we do not, we can agree to disagree, and there is absolutely nothing wrong with that.

**Tangible Results**

This experience has taught me foremost that I do belong! That I can do it! I had not been in school for almost 25 years, and to return to a graduate level program was daunting in the least. I do not have an undergraduate degree. I became a police officer at 19 years old, a mere 11 months after leaving high school. At the time, I had been accepted into what was then the Law and Security program at Algonquin College and the Governor General’s Foot Guards (GGFGs) regiment of the military. While the GGFGs were a potentially great summer job, when I got the call that I had been accepted onto the police force (back then), the decision was not debatable. I was going to be a cop!

So, I no longer needed to go to school, and although the desire to return has been present for a long time, it is something that I did not pursue actively. Until now. So I headed to Victoria and Royal Roads University with more than just a little trepidation. However, with perseverance
and more than just a little help, I have come out at the end with more positive elements than I ever thought possible. I have succeeded!

Apart from the learning within the academic aspects of the program, I have also learned more about project management than I had previously known. Accordingly, my time management skills have improved immensely, to the point where I am not daunted at having several things on the go at the same time. Currently, I am a member of the Board of Directors of the Ottawa Safety Council, and am active in the Community Safety Village Re-build Committee, which has required out of town travel. In addition, I am a member of the 50th Anniversary of Gloucester High School Reunion committee and am committed to providing the security and policing for the event, in addition to the sports program. Finally, I was recently elected the Vice President of the Student Region East, for the International Association of Emergency Managers (Canada). All these things put a lot on my plate, in addition to working part-time as a school bus operator. I have managed to balance everything and feel that I remain on top of it all.

I have learned about research on a level that I had no idea existed, and have learned how to navigate resources in order to find the data I am looking for. I have learned to listen actively to what people are telling me and to interpret what I have heard. I have learned to use surveys and how to interview people appropriately. All these elements will serve me well in my future, as I embark on the next phase of my life and career. Whereas beforehand I may not have been so motivated by the challenges that face me, now I cannot wait for them.

Conclusion

I have learned that I am worthy, yet I try to remain humble. I have learned that I do belong. I have learned that I have and will continue to succeed. I will continue to concentrate, however, on that which motivates me the most—the training and mentoring of those who will
follow me and hopefully improve upon what I have already accomplished. It has been one heck of a ride: I have thoroughly enjoyed it, I have grown from it, and I would not have missed it for the world.
References


UT5yKhwZeRY


Appendix A: Invitation to Participate in a Research Survey

My name is Damien Coakeley. I am a retired member of the Ottawa Police Service, and over the years we may have crossed paths on several occasions. I am now a master’s candidate at Royal Roads University, in Victoria, B.C., and I would like to invite you to be part of a research project that I am conducting. This project is part of the requirement for the Master of Arts Degree in Disaster and Emergency Management (MADEM). My credentials with Royal Roads University can be established by calling the supervisor, Dr. Robin Cox, or the program head, Jean Slick, at [telephone number].

I am examining the levels of inter-agency collaboration and inter-operability between emergency first response services in Ottawa. This research is being performed according to the ethical standards of Royal Roads University and is being supervised by the university. This study will identify the important aspects of inter-agency collaboration and inter-operability between the emergency first response agencies (police, fire and paramedics) within Ottawa as it pertains to front line first responders. It will examine what is presently in place, and what could or should be further implemented, based on the opinions and experiences of front line first responders, in order to achieve a co-ordinated level of inter-operability in the event of a large-scale emergency or disaster.

Your participation in a two part survey is completely voluntary, and, anonymous. It is being submitted randomly to all members of emergency services in Ottawa and it should take you no more than twenty minutes to complete. Responses from the survey will be recorded, coded and where appropriate, summarized anonymously in the body of the final report. No specific comments will be attributed to any individual unless specific agreement has been obtained
beforehand. All documentation will locked and kept strictly confidential, to which only I have access.

A copy of the final report will be prepared, and offered to Ottawa emergency first response agencies. A copy will also be housed at Royal Roads University and be publicly accessible online through UMI/Proquest and the Theses Canada portal. Access and distribution will be unrestricted. It is not intended for commercialization.

You are not compelled to participate in this research project. If you do participate, you are free to withdraw at any time without prejudice. There are no conflicts of interest anticipated on either the part of the researcher or my sponsors.

Once you have completed the survey, I respectfully ask you to consider being willing to further participate in my research, by means of a personal, one-on-one interview, and/or involvement in focus groups both within your own agency and across all three. If you are interested in doing so, or should you wish further information on my research, please do not hesitate to contact me at either [telephone number] or at [email address].

Sincerely,

Damien Coakeley
Appendix B: Research Survey

1. During your career, have you responded to an emergency scenario that involved response of all front line first emergency services, in Ottawa?
   - [ ] Yes
   - [ ] No

2. On an annual basis, please estimate the number of such emergency scenarios described above, that you would respond to.
   - [ ] 0-10
   - [ ] 11-20
   - [ ] 21-30
   - [ ] 31-40
   - [ ] 40+

3. Considering the collaboration required between the responding emergency services (police, fire and paramedic), please rate the levels of collaboration you would typically experience.
   - [ ] virtually non-existent
   - [ ] little to some
   - [ ] adequate
   - [ ] good to very good
   - [ ] outstanding

4. In respect of the levels of collaboration that you have experienced between front line emergency responders, please rate that collaboration along the following lines.
There was utter confusion amongst us.

We worked in silos, only concerned about our own mandates.

We tried to work together, but continually stepped on each other’s toes.

We generally worked well together.

We collaborated very well, respecting each other’s functions and mandates.

5. Considering the collaboration previously mentioned, please briefly explain what went well, or what did not go well (you have 250 characters).

6. Do you feel as though you understand the basic "standard operating procedures" of (include all that apply):

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>paramedics</td>
<td>☐</td>
</tr>
<tr>
<td>firefighting</td>
<td>☐</td>
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<tr>
<td>police</td>
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</tbody>
</table>

7. Have you had any cross-training experience with any other emergency first response agency within your capacity in the City of Ottawa?

☐ Yes

☐ No

8. With respect to the above question, how much training have you had? This can include simply theoretical (class) training.
1. Little or none
2. Some (1 event or less/year)
3. Annual
4. Semi-Annual (1-2 events/year)
5. Regular

9. If you answered “annual,” “semi-annual,” or “regular” on the last question, please briefly describe the level and type of training you received (you have 250 characters).

10. If you answered “little or none” or “some” to the question 8, what type of training would you like to receive in relation to inter-agency inter-operability (you have 300 characters).

11. How long have you been employed in your emergency response career (if you have transferred to Ottawa from another jurisdiction, please include total time in all jurisdictions)?

   0-5 years
   6-10 years
   11-15 years
   16-20 years
   21+ years

12. What is your rank/level within your organization?

   Constable, firefighter, paramedic (incl. advanced care)
   NCO, Lieutenant, Paramedic Supervisor
   Inspector, Captain, Paramedic Superintendent
13. To what section of your organization do you belong?

☐ Front line emergency response

☐ Emergency response supervisor/manager

☐ Secondary Investigations (ie: detectives, fire prevention, arson investigation etc.)

☐ Administration

☐ Executive/Upper Management

14. What is your gender?

☐ Male

☐ Female

15. What is your highest level of education?

☐ High School

☐ Post Secondary, Community College or Vocational (ie: Police, Fire College only)

☐ University under-grad

☐ Graduate

☐ PhD

16. Given your current operational environment, what do you believe facilitates intra and inter-agency collaboration in a significant emergency or disaster? For this and the next two questions, you have 600 characters.
17. Given your current operational environment, what do you believe hinders intra and inter-agency collaboration in a significant emergency or disaster?

18. What would you recommend (by way of policy, practice or resources) that would enhance inter-agency collaboration in a significant emergency or disaster?

19. Based on this survey, is there anything else you would like to offer as a comment or a suggestion? (You have 500 characters.)
Appendix C: Participant Informed Consent: Online Research Survey via LinkedIn

1. I confirm that I have read and understand the Information Sheet for the above study.

2. I understand that my participation is voluntary and that I can stop participating in this study without giving explanations at any time until I submit my answers to the researcher.

3. I am aware that my participation implies answering an online survey. I may also be asked to participate in an online interview, if I give my consent to do so. Such an interview will be recorded, transcribed, coded, and analysed.

4. The results of this study might be submitted for publication in a scientific journal or presented at academic conferences.

5. My data will be stored confidentially in an electronic format and/or in a locked file cabinet until after the appearance of associated publications.

6. I agree to the use of anonymised quotes in publications or in presentations at conferences or other related meetings of researchers.

7. The full study will take until approximately March 2013 to complete. Upon request, I will be directed to any publications that result during the study.

8. All questions that I have about this study have been answered.

By clicking 'yes' below, I give my consent so my data can be used for the described purpose of this study.
Appendix D: Invitation to Participate in One-on-One Interview

My name is Damien Coakeley, and I would like to invite you to be part of a research project that I am conducting. This project is part of the requirement for a Master of Arts in Disaster and Emergency Management (MADEM) at Royal Roads University in British Columbia, Canada. My credentials with Royal Roads University can be established by calling the program head, Jean Slick, at [telephone number]. I am examining the levels of inter-agency co-operation and inter-operability between emergency first response services in the National Capital Region (NCR). This research is being performed according to the ethical standards of Royal Roads University and is being supervised by the university.

This study will identify the important aspects of inter-agency co-operation and inter-operability between the emergency first response agencies (police, fire and paramedics) within the NCR as it pertains to front line first responders. It will examine what is presently in place, and what should be further implemented, based on the opinions and experiences of front line first responders, in order to achieve a co-ordinated level of inter-operability in the event of a large-scale emergency or disaster.

Your participation in a one-on-one interview is completely voluntary and anonymous. You have been chosen as a prospective participant because of your role as a front line emergency first responder within the NCR. Where appropriate, information will be summarized anonymously in the body of the final report. No specific comments will be attributed to any individual unless specific agreement has been obtained beforehand. All documentation and recorded material will be kept strictly confidential and maintained under lock and key, to which I will have sole access. Should you not wish to be recorded, you may so declare. Any and all recorded information (electronic or otherwise) will be destroyed upon project completion.
A copy of the final report will be published. A copy will be housed at Royal Roads University, available online through UMI/Proquest and the Theses Canada portal, and will be publicly accessible. Access and distribution will be unrestricted.

You are not compelled to participate in this research project. If you do choose to participate, you are free to withdraw at any time without prejudice. Any recordings taken to that time will be destroyed at your request.

The interview is expected to take no longer than 60 minutes. I will be contacting you shortly to set up a time that is mutually convenient. I look forward to your participation.

Should you wish further information with respect to this, please do not hesitate to call me at [telephone number] or via email at [email address].

Sincerely,

Damien Coakeley
Appendix E: Invitation to Participate in Focus Group

My name is Damien Coakeley, and I would like to invite you to be part of a research project that I am conducting. This project is part of the requirement for a Master of Arts in Disaster and Emergency Management (MADEM) at Royal Roads University in British Columbia, Canada. My credentials with Royal Roads University can be established by calling the program head, Jean Slick, at [telephone number]. I am examining the levels of inter-agency co-operation and inter-operability between emergency first response services in the National Capital Region (NCR). This research is being performed according to the ethical standards of Royal Roads University and is being supervised by the university.

This study will identify the important aspects of inter-agency co-operation and inter-operability between the emergency first response agencies (police, fire and paramedics) within the NCR as it pertains to front line first responders. It will examine what is presently in place, and what should and/or could be further implemented, based on the opinions and experiences of front line first responders, in order to achieve a co-ordinated level of inter-operability in the event of a large-scale emergency or disaster.

Your participation in a focus group comprised of your colleagues is completely voluntary, and, unless you choose otherwise, anonymous, except to those within the focus group. You were chosen as a prospective participant because of your role as a front line emergency first responder within the NCR.

Information from the focus group will be recorded and stored on computer. Where appropriate, information will be summarized anonymously in the body of the final report. No specific comments will be attributed to any individual unless specific agreement has been obtained beforehand. All documentation will be kept strictly confidential. I alone will have
access to all recorded material and it will be kept under lock and key. All recorded information will be destroyed upon project completion.

A copy of the final report will be published. A copy will be housed at Royal Roads University, available online through UMI/Proquest and the Theses Canada portal, and will be publicly accessible. Access and distribution will be unrestricted.

You are not compelled to participate in this research project. If you do choose to participate, you are free to withdraw at any time without prejudice.

Your focus group will be held on [date] at [time] at [location]. I look forward to your participation. Should you wish further information with respect to this, please do not hesitate to call me at [telephone number] or via email at [email address].

Sincerely,

Damien Coakeley
Appendix F: One-on-One Interview Consent Form

My name is Damien Coakeley, and I would like to invite you to be part of a research project that I am conducting. This project is part of the requirement for a Master of Arts in Disaster and Emergency Management (MADEM) at Royal Roads University in British Columbia, Canada. My credentials with Royal Roads University can be established by calling the program head, Jean Slick, at [telephone number]. I am examining the levels of inter-agency co-operation and inter-operability between emergency first response services in the National Capital Region (NCR). This research is being performed according to the ethical standards of Royal Roads University and is being supervised by the university.

This study will identify the important aspects of inter-agency co-operation and inter-operability between the emergency first response agencies (police, fire and paramedics) within the NCR as it pertains to front line first responders. It will examine what is presently in place, and what should and/or could be further implemented, based on the opinions and experiences of front line first responders, in order to achieve a co-ordinated level of inter-operability in the event of a large-scale emergency or disaster.

Your participation in this one-on-one interview is completely voluntary, and, unless you choose otherwise, anonymous. You were chosen as a prospective participant because of your role as a front line emergency first responder within the NCR. Information from the interview will be recorded in handwritten format. Where appropriate, information will be summarized anonymously in the body of the final report. No specific comments will be attributed to any individual unless specific agreement has been obtained beforehand. All documentation will be kept strictly confidential.
A copy of the final report will be published. A copy will be housed at Royal Roads University, available online through UMI/Proquest and the Theses Canada portal, and will be publicly accessible. Access and distribution will be unrestricted.

You are not compelled to participate in this research project. If you do choose to participate, you are free to withdraw at any time without prejudice. Similarly, if you choose not to participate in this research project, this information will also be maintained in confidence.

This document constitutes an agreement to participate in my research project. By signing this letter, you give free and informed consent to participate in this project.

Name (Please print): ______________________________________

Signed: _________________________________________________

Date: _________________________________________________
Appendix G: Focus Group Consent Form

My name is Damien Coakeley, and I would like to invite you to be part of a research project that I am conducting. This project is part of the requirement for a Master of Arts in Disaster and Emergency Management (MADEM) at Royal Roads University in British Columbia, Canada. My credentials with Royal Roads University can be established by calling the program head, Jean Slick, at [telephone number].

This objective of this study is to identify the important aspects of inter-agency co-operation and inter-operability between the emergency first response agencies (police, fire and paramedics) within the NCR as it pertains to front line first responders. It will examine what is presently in place, and what should and/or could be further implemented, based on the opinions and experiences of front line first responders, in order to achieve a co-ordinated level of inter-operability in the event of a large-scale emergency or disaster.

Your participation in this focus group is completely voluntary, and, unless you choose otherwise, anonymous. You were chosen as a prospective participant because of your role at Scotiabank Place. Information from the focus group will be recorded in handwritten format. Where appropriate, information will be summarized anonymously in the body of the final report. No specific comments will be attributed to any individual unless specific agreement has been obtained beforehand. All documentation will be kept strictly confidential.

A copy of the final report will be published. A copy will be housed at Royal Roads University, available online through UMI/Proquest and the Theses Canada portal, and will be publicly accessible. Access and distribution will be unrestricted.

You are not compelled to participate in this research project. If you do choose to participate, you are free to withdraw at any time without prejudice. Similarly, if you choose
not to participate in this research project, this information will also be maintained in confidence.

This document constitutes an agreement to participate in my research project. By signing this letter, you give free and informed consent to participate in this project.

Name (Please print): ________________________________

Signed: __________________________________________

Date: ____________________________________________