

Integrating Emergency Management into Local Government Corporate Culture

Capstone Research Project

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Executive Summary

This project explores the integration of emergency management into local government corporate culture in British Columbia and identifies best practices for consideration. Research includes an extensive literature review and original research via an online survey of current emergency program coordinators in British Columbia.

Research delves into what constitutes successful emergency management programs, the potential benefits and challenges of emergency management integration, and best practices for integration into local government corporate culture. Emergency program coordinators confirm that they considered emergency management integration important and share best practices for how they elicit participation and share emergency management information with other local government departments. Best practices include building relationships, collaboration and strategic leadership. Further research is required to identify how to take emergency management to the next level for strategic initiatives that will create sustainable and resilient local governments and communities.

Emergency program coordinators are in a unique position to support their organizations in creating a new vision for sustainable and resilient communities by integrating emergency management into the local government corporate culture and together with local government senior management becoming the leaders their communities need and expect for a better future.

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Integrating Emergency Management into Local Government Corporate Culture

Local governments in British Columbia are required to “implement emergency plans and other preparedness, response and recovery measures for emergencies and disasters” (*Emergency Program Act*, RSBC 1996, c 111, s 6(3)). Ensuring that emergency programs are effective and encompass an all-hazards approach is one of the core challenges of emergency program coordinators. It is anticipated that the most successful emergency programs are those where emergency management is thoroughly integrated into the corporate culture.

The research question comprises three aspects: 1) What are the measurable criteria for successful emergency management? 2) Is integration of emergency management into the local government corporate culture beneficial for success? 3) What three best practices can emergency program coordinators use to integrate emergency management into their local government corporate culture?

Background

Traditionally emergency management programs are seen as standalone plans and strategies reserved for dealing with emergencies and disasters. Emergency program coordinators continue to express frustration at the lack of knowledge and integration of emergency management with other local government services and responsibilities (British Columbia Association of Emergency Managers, personal communication, September 22, 2012; Mid Island Emergency Coordinators & Managers, personal communication, September 17, 2014). Emergency program coordinators’ increased understanding and knowledge of emergency management principles provides insights into how valuable and beneficial emergency management concepts and systems are. Increasing integration of emergency management into local government corporate culture can provide significant improvements to day-to-day decision

making and operations for local governments. Potential improvements include identifying and sharing local hazards, risks and vulnerabilities, informing local land-use considerations, building justification for critical infrastructure upgrades and supporting the need for business continuity and recovery to ensure that the local government can continue to function following a major emergency or disaster.

Research has shown that integrating new requirements into existing systems and processes is more effective than simply adding new requirements that lack this connection (Leblanc & Abel, 2008). For example, community recovery is a relatively new concept and responsibility for local governments. When introduced as a separate legislated requirement without clear tie in to the existing emergency response principles and processes it can seem very overwhelming and create a great deal of push back. However, introduced as an extension of emergency response that uses the same principles and systems, it seems much less foreign and seems easier to adapt into the existing systems. It is anticipated that finding effective ways to integrate emergency management principles and practices into existing local government systems, services and corporate culture will lead to increasingly effective emergency management as local government personnel become familiar with emergency management concepts, strategies and objectives. Ideally integration will also result in more effective local government services because it provides the opportunity to consider potential hazards, risk likelihood and organization/community vulnerabilities in:

- land-use planning;
- critical infrastructure building, maintenance and emergency response plan criteria; and,
- business continuity considerations.

These improvements would hopefully also lead to further community research and developments for more sustainable and resilient organizations and communities.

Research Project Rationale and Description

The scope of this research project is to:

- identify existing relevant research through a literature review;
- determine potential research gaps;
- conduct a survey of emergency program coordinators to:
 - identify the current level of emergency management integration;
 - determine whether emergency management integration is considered important and why;
 - and,
 - identify some potential best practices for integration.

The literature review seeks to gain further understanding of measurable criteria for successful emergency management; benefits of integrating emergency management into local government corporate culture; and recommendations for how integration can be accomplished. The information gained from this literature review will then be combined with further research to identify three best practices that can be utilized by emergency program coordinators to integrate emergency management into local government corporate culture.

The goal is to answer the three research question aspects with: successful emergency management program criteria, emergency management integration benefits and challenges, and three best practices that emergency program coordinators can implement to integrate emergency management into local government corporate culture. Although this research may have some applicability to other industries and organizations, the focus is on specific local government

responsibility to effectively lead their communities in emergency management in British Columbia.

Research Design and Methodology

Literature Review Methodology

The literature review began with a series of searches conducted in the scholarly literature available through the JIBC Library and general Internet searches. Search terms included:

- integrat* emergency management;
- land-use planning and emergency management;
- public works emergency management;
- engineering and emergency management;
- municipal and emergency management; and,
- chang* corporate culture.

Results were extensive for many of these searches, so criteria was narrowed using limiters such as peer reviewed, full text availability, academic journals, and articles after 1989. Titles and subject terms often gave clear indication of potential relevance, and those that used a number of the search terms were further analyzed based on the abstract information. The most promising articles were then scanned for relevant information and approximately twenty-five articles were read. With so many articles, further culling was done based on how well the articles answered the research question themes.

Course materials were also reviewed to assist with identifying the basic concepts for this research paper. It was surprising to find such extensive literature to review in the field of emergency management. Given that Emergency Management British Columbia provides

legislative direction and guidelines, these directives and guidelines formed the basis for determining the relevance and validity of the extensive literature related to this topic.

Survey Research Methodology

A series of 19 questions were developed based on the literature review. FluidSurvey, a Canadian-based survey tool, was used to administer the online survey. Using tools that are owned and maintained in Canada is important for protecting personal information as legislated in the *BC Freedom of Information and Protection of Privacy Act* (FIPPA, 1996, c 165). The survey questions along with the preamble were submitted to the Justice Institute of British Columbia Research Ethics Board for approval prior to being distributed.

Once approval was received, the survey was disseminated via email to 172 local government emergency program coordinators in British Columbia. These individuals were identified using a variety of resources including personal contacts and the UBCM directory of local governments, which lists 190 local governments. In some cases, local government websites were further researched to try to identify the correct individual. Fifteen emails were not delivered successfully. An additional 19 received out of office replies, 2 of which would not be back in time to respond to the email. Individuals were encouraged to forward the survey to the correct person if they were not the current emergency program coordinator. As a result, there were potentially 155 respondents.

Literature Review

Three broad themes emerged during this literature review. The first theme identifies criteria for successful emergency management. The second theme demonstrates the benefits of integrating emergency management into local government corporate culture. The third theme

identifies various processes for accomplishing integration. These three themes are explored and analyzed through this literature review.

Criteria for Successful Emergency Management

Various organizations have developed criteria for assessing what makes emergency management successful. Somers and Svara (2009) focus on anticipating risks, managing risks and responding to emergencies. Some of the specific concerns that local governments need to understand are the legal requirements, social equity commitments and the political context being negotiating. Somers and Svara (2009) identify seven issues for emergency program coordinators to focus on understanding the issues, professional staff, collaboration, effective management, simultaneous emergency response and business continuity, exercising and improving plans, and effective site and site support plans (pp. 186-188). All of this requires buy-in from administrators and senior managers to be integrated into effective organizational and emergency management. Further efforts are needed to inform senior management of the benefits for collaboration with emergency management.

In British Columbia, Emergency Management BC provides the *Community Emergency Program Review* (2007) as a free, online tool for local governments to use to determine their level of preparedness. It is expected that high scores in this review would suggest more successful and comprehensive emergency management programs. This tool may be most useful for medium to large communities that have resources to use towards meeting the criteria outlined in the *Community Emergency Program Review* for emergency management. For small rural communities that are struggling just to survive, the additional financial burden of trying to develop a comprehensive emergency program as outlined in the toolkit may not be feasible. For example, the review asks questions such as:

- financial allocations for extraordinary expenses, (EMBC, 2007, question 1-10);
- “strategic plan with a program budget,” (EMBC, 2007, question 1-11-5);
- “is the coordinator employed full-time as the coordinator”, (EMBC, 2007, question 1-14);
- and,
- “has the community developed a recovery plan, approved by the Executive Committee and Council/Board/Band, to deal with the immediate and short-term effects of an emergency/disaster” (EMBC, 2007, question 6-1).

This raises the question of whether these criteria are appropriate for small rural communities.

Perhaps the *Community Emergency Program Review* (2007) tool needs to be revised to recognize the differing needs of large and small communities and provide a more appropriate set of criteria for small rural communities rather than suggesting that one size fits all.

Henstra (2010) evaluates what type of framework local governments should adopt for successful emergency management. Henstra (2010) defines successful emergency management as “the extent to which a local government has adopted policies to prepare for emergencies, mitigate their impacts, ensure an effective emergency response, and facilitate community recovery” (p. 238). Henstra (2010) suggests most of the same criteria that are outlined in the *Community Emergency Program Review* (EMBC, 2007) and adds “dangerous goods routing,” “search and rescue,” “continuity of operations,” and “debris management” (Henstra, 2010, pp. 240-242). Henstra is very thorough in suggesting so many aspects for evaluation, however, conducting such an evaluation would take considerable time and resources that many smaller communities would not be able to facilitate. When considering evaluation criteria, the size, resource needs and capacities should be considered. Henstra (2010) concludes that “program

evaluation ... can raise the profile of emergency management, demonstrate the value of efforts in this area, and buttress requests for additional resources when they are needed” (p. 243).

Reviewing the literature specifically for criteria that can be useful for assessing successful emergency management integration highlighted a number of challenges and opportunities. Gerber and Robinson (2009) researched the broader challenges of regional integration in the United States and based their analysis on a sample frame of 1,767 city and county officials from which 725 (41%) responded to the survey. Four performance indicators were researched: “doctrine awareness” (2009, p. 357); “vertical and horizontal coordination” (2009, p. 358); “coordinated response readiness” (2009, p. 361); and “disaster or catastrophe readiness” (2009, p. 363). Conclusions identified several limitations including policy dependence, lack of transferability between types of disasters and the desire of survey participants to impress the researchers (Gerber & Robinson, 2009). Gerber and Robinson (2009) suggest that “collaboration and consultation between local preparedness efforts are increasing success” and that “measurement requires a multi-faceted approach” (p. 467).

All of the criteria outlined in the literature can be used for evaluating successful emergency management programs and this information will be useful for identifying the benefits and challenges with integration of emergency management into local government corporate culture. These criteria can be used to determine whether integration is likely to promote successful emergency management by identifying how integration best practices are meeting these objectives.

Benefits of Emergency Management Integration into Local Government Corporate Culture

There are many examples of the importance of integrating emergency management into local government corporate culture. Effective emergency management requires that local

government personnel understand the emergency management structures, principles and practices. For example, the structure of emergency management identifies the need for an EOC director with sufficient authority to make significant decisions regarding personnel, equipment and funding of emergency response and recovery. In many local governments, the logical choice is the Chief Executive Officer or Chief Administrative Officer. Section Chiefs are frequently selected from senior management for the ability to manage and the authority to make corporate decisions. These individuals need solid understanding of, and experience with emergency management principles and practices to be effective when called into action in an emergency operations centre to deal with major emergencies and disasters. In this environment, information needs to be digested thoroughly, decisions need to be made quickly, and incident operations need to be supported effectively. Integration of emergency management into local government corporate culture ideally brings emergency management principles and practices into day-to-day operations. This results in increased familiarity, competence and confidence when dealing with major emergencies and disasters (Leblanc & Abel, 2008).

Local governments also make many decisions regarding land-use. Understanding the hazards, risks and vulnerabilities of their community could greatly enhance this decision-making process to mitigate some of these risks and vulnerabilities. Local government is responsible for some, or all, of the critical infrastructure such as roads, bridges, water and sewer systems, etc. Understanding the hazards, risks and vulnerabilities for critical infrastructure could greatly inform where infrastructure is placed and ensuring that the infrastructure is capable of withstanding the types of hazards and corresponding risks as possible for a given region (Britton & Lindsay, 1995).

Mitigation is one of the four phases of emergency management that local governments need to embrace. Making use of the HRVA information, mitigation works to reduce or even prevent potential hazards and risks (EMBC, n.d.). Preventing emergencies from turning into disasters or reducing potential impacts saves lives, response and recovery time, and ultimately resources and funding. Britton and Lindsay (1995) focused their research on the importance of integrating land-use planning with emergency management. Some examples include demonstrating how having industrial, utility and residential areas placed in close proximity to each other increases the risk to the residential areas. If these combined land-use areas are then placed into the path of an identified hazard like a floodplain, interface wildfire zone or major highway, the industrial and utility uses are likely to raise the level of risk to the residential area with greater potential for fires and contamination of surrounding air and water quality. These residential areas are also likely to house more vulnerable populations because of the lower-cost housing options frequently located in these less desirable areas (Britton, & Lindsay, 1995). It is interesting to note that even back in 1995 there was recognition of the importance of integrating emergency management as part of the land-use planning process, and how it can better inform that process to give consideration to making choices that reduce the potential risks (Britton, & Lindsay, 1995). Despite research to this effect (Berke, Beatley & Wilhite, 1989; Britton, & Lindsay, 1995; Carr, 2007; Gerber & Robinson, 2009; Wamsler, 2006), experience suggests that little advancement has been made in the interim and that attempts to integrate emergency management and land-use planning are still less than ideal.

Herk, Zevenbergen, Rijke and Ashley (2011) identified the connection between flood risk management and land-use planning. Integrating emergency management prior to a disaster provides the context and information for making decisions that reduce risks. Many water and

sewer systems have been in place for 50+ years and are increasingly subject to failure.

Integrating emergency management considerations into planning and replacement strategies can significantly reduce the likelihood of major failures in the future. Choosing seismically sound options can greatly reduce the impacts of earthquakes on those systems in seismically prone areas (B. Kerr, personal communication, October 3, 2014). Herk, et. al., (2011) suggest that collaborative research between engineers, scientists and emergency program coordinators along with local experiments and projects can serve to promote integrated flood risk management.

Local governments rely on geographical information systems (GIS) to provide detailed information regarding the communities served. Integrating emergency management into local government GIS systems provides important layers of information that can significantly improve local government decision making. Breen and Parrish (2013) focus on how GIS can assist agencies and organizations to “organize and analyze a variety of spatial and analytical data” (p. 477). With myriad layers of information brought together visually, engineers, land-use planners, emergency program coordinators and environmentalists can integrate their specific data sets and gain critical understanding of how myriad components intersect and impact each other. Communication during emergencies or disasters is also critical and GIS maps are a useful tool that can greatly improve communications effectiveness by providing dispersed response, recovery and support sites with integrated, visually enhanced information (Breen & Parrish, 2013). With such heavy dependence on GIS systems, serious consideration needs to be given to how to ensure that these systems can provide information effectively during and after a disaster that impacts the organization and community (Breen & Parrish, 2013).

Collaboration prior to disasters has been shown to dramatically increase effectiveness in emergency response and recovery management and lack of collaboration has frequently been

identified as a source of failure (Waugh & Streib, 2006). Collaboration occurs where relationships and networks have already been successfully established. This requires time, effort and leadership from the executive level to establish and develop prior to when major emergencies or disasters occur. Collaboration can then also lead to opportunities for further integration of emergency management into mainstream local government services and corporate culture as the benefits of collaboration become visible.

Recommendations for Accomplishing Integration

Sang Ok (2008) recommends that organizations need to focus on strategic emergency management for integrating emergency management into corporate culture. Strategic management is based on creating “a new vision of vital, resilient communities that are able to assess and manage their own risk in order to limit escalating damage from disasters” (Sang Ok, 2008, p. 7). Leadership needs to be flexible and adaptable to changing environments and demands. Organizations need to develop higher degrees of autonomy for their personnel to respond effectively to disasters rather than getting bogged down in multiple layers of approval. Emergency program coordinators also need to make the effort to understand the unique corporate culture and approach of senior management. Demonstrating the relationship between emergency management and that unique perspective can foster innovative and effective engagement strategies. Ideally, senior management will recognize how emergency management integration benefits the organization globally and incorporate emergency management principles into the corporate mandate (Sang Ok, 2008). Specific benefits of integration include: “forward thinking; capacity building; goal identification and achievement; professionalism and more funding; and increased public support and accountability” (Sang Ok, 2008, p. 12).

Alesi (2008) focuses on integrating business continuity into corporate culture. Business continuity is increasingly being recognized as being an integral part of emergency management; Alesi's recommendations are therefore also relevant to integrating emergency management into corporate culture (2008). When disaster strikes, local government is expected to be up and running and working to resolve all the issues. If the local government is unprepared, response is unlikely to be effective (Waugh & Streib, 2006, p. 138). Alesi (2008) explains why it is so critical for employees and managers to be accountable and responsible for the success of the organization. Senior management needs to be well versed in emergency management because how an organization deals with emergencies and disasters will be scrutinized by the media, the public, the people impacted and senior levels of government. Being prepared, trained and exercised ensures the ability to: deal effectively with situations that arise in a disaster; understand the overt and covert issues for the organization; and, respond flexibly and creatively to the changing demands of disasters (Alesi, 2008). Alesi (2008) suggests leveraging technology to encourage creative and flexible adaptation of business continuity and emergency planning by the individual business units of the organization. Together these processes empower employees to make emergency management relevant to their part of the organization, resulting in greater buy-in and integration (Alesi, 2008).

McGuire and Silvia (2010) also express the importance of collaboration but identify some interesting concepts regarding what promotes collaboration, including the perception of serious problems, the capability of the manager, and the organizational structure. It makes logical sense that if we perceive a problem as being difficult we are likely to reach out to others for advice or assistance. It also was not surprising that management skills and capacity would lead to greater collaboration. McGuire and Silvia (2010) found it interesting that stronger, well-defined internal

structures actually promoted greater collaboration, while uncertain and ambiguous organizational structures led to less collaboration. This may emanate from the greater sense of boundaries and certainty that well-defined corporate structures create, while greater uncertainty may result in hesitance to reach out (McGuire & Silvia, 2010). This conclusion would benefit from further research to assist organizations in understanding how uncertainty can negatively impact the organization's capacity to reach out and collaborate within the organization as well as with other organizations. This hesitation can hinder the development of integrated emergency management and potentially reduce effectiveness (McGuire & Silvia, 2010).

Discussion and Findings

Literature Review Findings

Effective collaboration needs to occur across all levels of local government and a focus on integrated emergency management provides the organization with the ability to identify all those critical, essential resources that are part of successful emergency response and recovery. The literature review indicates there are many benefits to integrating emergency management into local government corporate culture and this can lead to more successful emergency management. There are also plenty of challenges to integration including resistance from other departments, lack of vision from the executive level and the increasingly uncertain structure brought about by frequent re-organizations and leadership changes (Berke, Beatley & Wilhite, 1989; Britton & Lindsay, 1995; McGuire & Silvia, 2010; Sang Ok, 2008).

Conducting further research to gain a better understanding of how to effectively integrate emergency management into local government corporate culture has the potential to provide important and valuable best practices for emergency program coordinators. Increasing the effectiveness of local government emergency management has the potential to improve local government capacity for meeting the *British Columbia Emergency Response Management System* (Ministry of Justice, 2000) expectations and priority goals that include among others, saving lives, reducing suffering, protecting critical infrastructure, and developing resilient sustainable communities.

Research Findings

It is important in the developing field of emergency management to collect primary data as part of this research project to gain an understanding of the perspective of current emergency program coordinators regarding:

1. Whether integration of emergency management into local government corporate culture is considered important;
2. Why emergency program coordinators consider integration important;
3. What level of integration already exists;
4. Where the gaps are; and
5. What are considered to be best practices for increasing integration?

The population for this research was the 190 British Columbia local governments that could have responded, since every local government is required to designate an emergency program coordinator for their local authority (*Emergency Program Act*, RSBC 1996, c 111). From this population, 155 potential respondents were successfully invited to participate in the survey (79%). There were a total of 41 survey responses which represents 26% of those formally invited and 21% of the population. One variable that could not be completely encapsulated is that some local governments have more than one emergency program coordinator (i.e. one for each electoral area of a regional district). Had this breakdown been documented, the percentage of responses would likely have declined by several percentage points.

A second variable that must be identified is that the very nature of the survey title may have skewed the results by having only those that have an interest in integration respond. This potential variable is borne out by the responses summarized in *Figure 1*.

Figure 1

Do you think that it is important to integrate emergency management into local government corporate culture?

Critical	Very important	Important	Somewhat important	Not important	Total Responses
21 (51.2%)	14 (34.1%)	5 (12.2%)	1 (2.4%)	0 (0.0%)	41

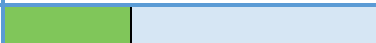




The very nature of emergency program coordinators as proponents of emergency management would also likely skew the results towards consideration that integration of emergency management is important.

Although this choice of sampling has likely skewed the results in favour of emergency management integration into local government corporate culture, it is an important viewpoint to start from. Lack of awareness and understanding tend to decrease interest in a subject and increase apathy and identification of perceived need. As a result, in the emerging field of emergency management, assessing the importance of integration with local government corporate culture is an important starting point. If emergency program coordinators do not see the value or importance of integration, there little point in pursuing best practices for integration. The survey results clearly identify that integration is important to emergency program coordinators, and therefore, warrants further research into how integration can increase making the desired outcome a reality.

In an effort to identify specific ways in which emergency management may be integrated into local government corporate culture, the survey presents a number of questions around the Hazard, Risk and Vulnerability Analysis (HRVA). To get a base number, participants identify how recently HRVAs were conducted. Participants were then asked to identify which local government departments participate in the process, receive the results, use the information, and how two specific departments (planning and engineering/public works) utilize this information. The purpose of this series of questions is to gain an understanding of how the HRVA information was being shared and used in local governments.

Figure 2

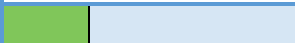





Has the local government conducted a Hazard, Risk and Vulnerability Analysis (HRVA) recently?

Response	Chart	Percentage	Count
Within 1 year		24.4%	10
Within 2 years		19.5%	8
Within 3 years		12.2%	5
Within 4 - 10 years		43.9%	18
Never		0.0%	0
Total Responses			41

It was very interesting to note that 43.9% of respondents had not conducted a HRVA in the last three years (see *Figure 2*). Perhaps there is an expectation that once the process has been completed, the information stays consistent over time. Perhaps respondents interpreted the question to mean only a full-scale committee-driven HRVA process, which is likely to not be done as frequently. Perhaps the survey could have added another question that asked how frequently the HRVA was reviewed and updated to better identify the currency of the HRVA.

Figure 3

Which departments of the local government participate in the HRVA process? (please check all that apply)







Response	Chart	Percentage	Count
Planning		39.0%	16
Engineering / Public Works		48.8%	20
Senior Management		48.8%	20
Elected Officials		17.1%	7
Emergency Management Committee		75.6%	31
Other, please specify...		34.1%	14
Total Responses			41

The question regarding which departments were involved in the HRVA process indicates that there is some involvement from other departments (see *Figure 3*). This may in part be because these individuals have been assigned to be part of the Emergency Management

Committee, which had a 75.6% participation rate. Other involvement included fire departments, first nations, and other agencies such as RCMP, Health Authority, Search & Rescue and neighbouring jurisdictions. It is encouraging to see that many of the respondents are including a variety of stakeholders in the HRVA process, as this is one way to be inclusive and increase the awareness of hazards, risks and vulnerabilities and has the potential for promoting the integration of emergency management into local government corporate culture.

Figure 4

Which departments of the local government receive the HRVA results? (please check all that apply)

Response	Chart	Percentage	Count
Planning		46.3%	19
Engineering / Public Works		51.2%	21
Senior Management		73.2%	30
Elected Officials		58.5%	24
Emergency Management Committee		87.8%	36
Other, please specify...		24.4%	10
Total Responses			41

Many of the organizations seem to successfully share HRVA results with other departments, agencies and stakeholders as seen in *Figure 4*. Some even commented that HRVA results are shared with the public via their website. This may actually be a very good strategy. Sharing information publicly could contribute to internal use of the HRVA information and potentially increase the level of emergency management integration.

To delve even deeper into emergency management integration, respondents were asked to specify how frequently two specific types of local government departments (planning – *Figure 5* and engineering/public works – *Figure 6*) use HRVA information. Here it was interesting to note that:

- only 39% of planning departments participate in the HRVA process;

- only 46.3% receive the HRVA information; and yet,
- 82.9% used the information at some point.

That leaves only 7 of 41 (17.1%) of planning departments that never use HRVA information.

When comparing the seven planning departments that never use HRVA information, three participate in the HRVA process and four do not. Similarly, 30 of the 41 (72.2%) engineering/public works departments use HRVA information at some point. Only 11 (26.8%) never use HRVA information and only 2 of the 11 participate in the HRVA process. This would suggest that involving these departments in the HRVA process is likely to increase their use of the HRVA information.

Figure 5

Is the HRVA information used by your planning department?

Often	Sometimes	Occasionally	Seldom	Never	Total Responses
4 (9.8%)	9 (22.0%)	12 (29.3%)	9 (22.0%)	7 (17.1%)	41

Figure 6

Is the HRVA information used by your engineering / public works department?

Often	Sometimes	Occasionally	Seldom	Never	Total Responses
2 (4.9%)	10 (24.4%)	11 (26.8%)	7 (17.1%)	11 (26.8%)	41

It would be interesting to perform detailed statistical analysis to identify if there is a significant correlation between those local government departments that participate in the HRVA process and the frequency and type of use of that information. This could provide some insight into the importance of promoting participation in the HRVA process as a strategy for increasing emergency management integration.

Figure 7 (planning) and *Figure 8* (engineering/public works) provide a further breakdown of how the HRVA information is used by these two types of local government departments. It was interesting to note that where other uses are specified, it is for uses such as

official community plans, evacuation plans and community wildfire protection plans. These additional uses provide potential suggestions for those just beginning to consider emergency management integration on the many subjects and decision processes that HRVA information could provide beneficial information for.

HRVA information is used 45% of the time for land-use planning and indicates an encouraging trend in HRVA use by planning departments. In some situations, other options may have applied less because these processes are not always applicable to each local government but this would require further research. As an example, many smaller local governments do not have the wherewithal to support GIS development.

It is encouraging to discover that engineering / public works departments use HRVA information for some essentials such as emergency response plans, infrastructure planning and water systems. Further research is needed in all of these areas to gain a more thorough understanding of how the information is used to inform these processes and systems, and whether use of HRVA information is improving the sustainability and resilience of these systems and processes.

Figure 7

How is the HRVA information used by your planning department? (please check all that apply)

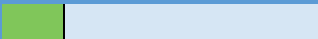





Response	Chart	Percentage	Count
Not used		25.0%	10
Land-use planning		45.0%	18
Subdivision planning		25.0%	10
Zoning Bylaw development		32.5%	13
Geographical Information Systems (GIS)		32.5%	13
Other, please provide example...		20.0%	8
Total Responses			40

Figure 8

How is the HRVA information used by your engineering / public works department? (please check all that apply)

Response	Chart	Percentage	Count
Not used		29.3%	12
Infrastructure planning		39.0%	16
Water systems		39.0%	16
Sewer systems		22.0%	9
Emergency response plans		58.5%	24
Other, please provide example...		2.4%	1
Total Responses			41

Business Continuity Management is another aspect of preparedness that local governments would do well to implement. Increasingly the fields of business continuity and emergency management are recognizing there is much in common, and that together more can be accomplished. Two questions are posed regarding the level of business continuity implementation the local government is perceived to do and whether this work is being done together with emergency management. The results shown in *Figures 9 & 10* indicate that local governments are still a long ways away from implementing business continuity or having business continuity and emergency management work together. This represents another consideration that should be pursued and further research conducted into why there is such a lack of business continuity planning in local government. The survey responses suggest that where business continuity management is implemented, there is also an increased likelihood that business continuity and emergency management are working together. It would be worthwhile to encourage local governments to pursue the integration of emergency management and business continuity management into the corporate culture.

*Figure 9**Does the local government actively participate in Business Continuity Management?*

Often	Sometimes	Occasionally	Seldom	Never	Total Responses
4 (10.3%)	5 (12.8%)	9 (23.1%)	13 (33.3%)	8 (20.5%)	39

*Figure 10**Are Emergency Management and Business Continuity Management working together?*

Often	Sometimes	Occasionally	Seldom	Never	Total Responses
4 (9.8%)	8 (19.5%)	8 (19.5%)	11 (26.8%)	10 (24.4%)	41

Another aspect considered to potentially be relevant to emergency management integration is the participation of departments in emergency management training and exercises. The survey responses identify that most local government departments participate to varying degrees in emergency program training and exercises. This represents another tool for integrating emergency management into the local government corporate culture. What needs to be further explored is how emergency program coordinators can best use emergency program training and exercises to demonstrate the value of emergency management for the day-to-day operations of other departments and thereby promote further integration and use of emergency management information.

*Figure 11**Do local government departments participate in emergency program training and exercises?*

	Often	Sometimes	Occasionally	Seldom	Never	Total Responses
Training	17 (41.5%)	14 (34.1%)	6 (14.6%)	3 (7.3%)	1 (2.4%)	41
Exercises	15 (37.5%)	14 (35.0%)	7 (17.5%)	4 (10.0%)	0 (0.0%)	40

The question regarding community population is included to provide potential analysis regarding whether community size has any impact on the level of emergency management

integration. This information did not identify significant differences for emergency management integration into small or large communities and requires further research to identify potential variations in the levels of integration required and the most useful types of integration. Size and resource capacity may also impact the effectiveness of emergency management integration.

Figure 12

What is the population range for your local government?

1 - 5,000	5,001 - 10,000	10,001 - 25,000	25,001 - 75,000	75,001+	Total Responses
13 (31.7%)	2 (4.9%)	16 (39.0%)	3 (7.3%)	7 (17.1%)	41

Figure 13

Have you experienced resistance from other departments not wanting to work with emergency management?

Often	Sometimes	Occasionally	Seldom	Never	Total Responses
3 (7.3%)	15 (36.6%)	9 (22.0%)	7 (17.1%)	7 (17.1%)	41

Resistance to new ideas, programs or even individuals is common. Emergency management is frequently viewed as the newcomer to local government and because it is a legislated requirement sometimes receives additional resistance simply due to perceived imposition. This legislated requirement for local government may contribute to reduced appreciation and recognition for the value of emergency management programs. With an additional lack of emergencies in many jurisdictions, emergency program coordinators may find themselves pushing the emergency management principles and concepts rather than having them sought out as an advantage (Henstra, 2010). Further research into reasons for resistance would likely be worthwhile.

Figure 14

To what extent do you think emergency management is integrated into your local government?

0%	1 - 25%	26 - 50%	51-75%	76 - 100%	Total Responses
0 (0.0%)	9 (22.5%)	13 (32.5%)	13 (32.5%)	5 (12.5%)	40

Figure 15

Integration Percentage	Population					Totals
	1-5,000	5,001-10,000	10,001-25,000	25,001-75,000	75,001+	
0%	1	0	0	0	0	1
1-25%	2	1	5	1	0	9
26-50%	4	1	5	0	3	13
51-75%	4	0	5	1	3	13
76-100%	2	0	1	1	1	5
Totals	13	2	16	3	7	41

When population numbers are compared with integration percentage it becomes quite apparent that integration is not really tied to population. Every level of population had some level of integration. What did show up is that respondents perceive that local governments are somewhat integrated with 26 (64.3%) at 26 - 75% integrated; 9 (21.9%) only 1-25% integrated; and only 5 (12.2%) are well integrated at 76-100%. Only one small community is considered to achieve no level of integration to date and are the only one to indicate frequent experience with resistance. Further research would likely provide increased understanding of those local governments that are not achieving any level of integration to identify potential issues that hinder integration efforts (see *Figure 15*).

Survey Respondents Provide Rationale Regarding Importance of Integration

Survey respondents indicate that integrating emergency management into local government corporate culture is important and provides a number of benefits including:

- Increase training, experience and understanding of emergency roles for all local government personnel including elected officials;
- Improved practice and application in day-to-day operations;
- Increase awareness of hazards, risks and vulnerabilities to inform local government processes and promote leadership buy-in;
- Increase effectiveness of response resulting in more effective recovery processes;
- Inform land-use planning, critical infrastructure planning, and appreciation of mitigation strategies to minimize local government vulnerability;
- Support emergency management budgets;
- Increase community resilience and local government capacity to understand and meet community needs and expectations; and,
- Increasing inclusion of mitigation strategies such as FireSmart principles.

All local government departments have roles and responsibilities in emergency response and recovery, so working together in planning, preparedness and mitigation as well, increases understanding, capacity and the potential for achieving more successful outcomes.

Respondent Best Practice Suggestions

Respondents shared advice or best practices to benefit new emergency program coordinators. A summary of these suggestions is as follows:

- Building relationships within the local government and gaining support from the executive including elected officials, chief administrative officers and senior management;
- Promoting the broad application of emergency management in the organization and encouraging a culture of corporate resilience;
- Building relationships with other emergency program coordinators;

- Staying current with legislation, training, exercises and workshops;
- Demonstrating interest in other departments and asking for their expertise to guide emergency management planning to promote collaboration;
- Understanding the local government corporate culture and perspectives and ensuring that reports and recommendations include pertinent information that other departments can relate to and identify clearly the impact to their own responsibilities;
- Focusing public education both internally to the local government and externally to the public and other agencies and organizations;

It is interesting to note that the recommendations identified in the literature review were also raised by the emergency program coordinators that responded to the survey. These recommendations are also highlighted in the course and general reference materials within emergency management as well as in the business world. The top three best practices will be explained in the following section.

Best Practice Recommendations

Understanding Corporate Culture and Building Relationships

In this day and age it is not enough to just understand our particular field of interest or responsibility. To be effective, emergency program coordinators need to take an interest in the organization and take the time to learn about and understand what each local government department is responsible for, what is working for them, where the challenges are and what the best fit for emergency management is in the larger organization.

This best practice is expressed in the survey responses and is supported through the literature review findings and business reference materials. For example, emergency program coordinators need to be involved in policy development for the organization. This requires taking

the opportunity to explore issues not just from an operational perspective, but from a policy perspective and considering how best to develop, communicate and implement policies. In this process it is important to:

- take time to identify problems;
- develop sound policies to solve problems;
- create plans to communicate policies to those impacted effectively;
- consult with stakeholders to get ideas, solutions and buy-in;
- work on implementation plans to ensure policy goals are achieved; and,
- review programs to ensure changing demands are met (Pal, 2014).

This process applies to emergency management as well as business continuity management.

Good management requires: involved stakeholders; problem comprehension; thorough plans; inclusive implementation plans; and continuous improvement to introduce best practices and meet changing requirements (Kaner, Lind, Toldi, Fisk & Berger, 2007).

In practical terms, emergency program coordinators are encouraged to;

- meet early and often with other local government departments;
- attend local government committee meetings and listen to the issues and concerns and recommendations of other departments;
- demonstrate interest and request inclusion in connected processes such as land-use planning, official community plans, emergency response plans for critical infrastructure and other relevant strategies where emergency management information could enhance and support their objectives; and,
- provide regular updates, training, workshops and exercises with an effort to ensure relevance and integration with existing programs and responsibilities.

Relationships are the cornerstone of most successful ventures. For an organization to be successful, personnel, partners, suppliers and purchases of the services or products are all interrelated. The extent to which we recognize and appreciate these interdependencies, determines the organizations ability to survive the inevitable challenges, emergencies and disasters. It is important for emergency program coordinators to work at breaking down the barriers and developing productive relationships with the rest of the organization. Sometimes with the workload it seems easier to just stay in our own silos and work harder. The reality is that when disasters happen we will need everyone to be involved. Relationships built during calmer times will help us to weather the challenges together. MindTools (2014) suggests that good relationships are built on trust, respect, openness and time invested.

Collaboration

Collaboration has long been identified as necessary for effective emergency management. Robinson (2009) indicated that “doctrine awareness” (2009, p. 357) and “vertical and horizontal coordination” (2009, p. 358) both promoted successful integration. Herk, et. al., (2011) suggest that collaborative research between engineers, scientists and emergency program coordinators along with local experiments and projects can serve to promote integrated flood risk management.

Collaboration is a two-way process that requires openness and reciprocal sharing of information, strategies and resources. It is interesting to discover that clear organizational structures can enhance collaboration while ambiguous organizational structures can hinder collaboration (McGuire & Silvia, 2010). McGuire & Silvia (2010) suggest this may be due to the role and responsibility uncertainty caused by ambiguous structures that may lead to hesitance on the part of personnel to take chances and share concerns or issues with others.

Emergency program coordinators are encouraged to:

- provide plenty of opportunities for information sharing, training, workshops and exercises;
- report regularly to senior management and elected officials on projects and accomplishments;
- willingly offer support to others regardless of any direct impact to emergency management;
- and,
- welcome participation from other local government departments, agencies, stakeholders and interested public.

Collaboration is strengthened by diversity. Recognizing that collaboration will result in broader perspectives and the potential for better, more inclusive solutions will benefit emergency management, local government corporate culture and the communities served (Waugh & Streib, 2006).

Strategic Emergency Management

Sang Ok (2008) recommends that organizations need to focus on strategic emergency management as a strategy for integrating emergency management into corporate culture.

Strategic management is based on creating “a new vision of vital, resilient communities that are able to assess and manage their own risk in order to limit escalating damage from disasters”, (Sang Ok, 2008, p. 7). As such the emergency program coordinator can become a vital link to leading the local government in the process of creating that new vision regarding their very real and expanding role and responsibility for resilient and sustainable communities. Specific benefits of integration include: “forward thinking; capacity building; goal identification and achievement; professionalism and more funding; and increased public support and accountability” (Sang Ok, 2008, p. 12).

Emergency program coordinators are encouraged to:

- See the big picture by visualizing what the ideal community could be;
- Share and build this vision together with senior managers, elected officials and community;
- Promote business continuity principles into emergency management strategies to increase local government sustainability; and,
- Promote local government strategic planning to delineate the preparedness, mitigation, response and recovery initiatives to make this vision a reality.

Strategic emergency management enables the emergency program coordinators to work effectively with senior management, speak their language and demonstrate how incorporating emergency management into strategic policy direction will enhance the local government's capacity to excel in providing the leadership and services that today's communities expect and depend upon.

Best Practice Challenges

Emergency program coordinators are likely to agree that these best practice recommendations would help them to integrate emergency management into local government corporate culture but are also likely to perceive a number of challenges to these recommendations. Many emergency program coordinators are still only part-time or responsible for other local government services such as fire departments or bylaw enforcement. This often leaves time for strategic emergency management limited and response driven. Human and financial resources are also often limited and in a time of fiscal restraint, it is often emergency management programs that suffer loss. In addition, literature research and the experience of emergency program coordinators identified resistance of other local government personnel to be an issue. Only 7 of 41 (17.1%) stated there was no resistance leaving 82.9% or 34 of 41 that encountered resistance at least some of the time.

Adding significant time and resource allocations as recommended by these best practices to already overflowing responsibilities may not seem feasible. More research is likely required and efforts on the part of academia to promote the importance of emergency management for local governments at venues such as Union of British Columbia Municipalities (UBCM) may prove helpful in paving the way for further recognition and integration.

Conclusion

Further research should be conducted to identify the best strategies and policies for local government to develop sustainable and resilient communities, are better prepared and have mitigated risks through legislation and sound decision-making. Ideally, this will result in effective response and recovery capacity and potentially prevent some emergencies from turning into disasters for the organization or the community.

Integrating emergency management into local government corporate culture is important and perhaps even critical to the survivability of the organizations and the communities that they serve. Research shows that integrating new requirements into existing systems and processes is more effective than simply adding new requirements that lack this connection (Leblanc & Abel, 2008). Since emergency management is still often perceived as the “new kid on the block” in local government, this provides excellent opportunities to build relationships, learn to understand other local government department priorities and responsibilities, and then provide the building blocks for incorporating the principles and strategies into these existing systems to build the sought after emergency management integration.

This is where the emergency program coordinator can excel. Emergency management education and experience provides them with the knowledge, insights and practical responses to some of the greatest challenges local governments will ever face. Learning how to share their knowledge in preparedness, mitigation, response and recovery in strategic terms that demonstrate

how integrating emergency management into local government corporate culture will protect the organization and establish it as a strategic leader that is proactive, trustworthy and forward thinking. Local governments that embrace emergency management have the potential to excel in the good times and the bad times. Taking social responsibility to the next level is an upward challenge that can culminate in truly resilient and sustainable communities where local governments and leading emergency program coordinators are the heroes that effectively prepared, mitigated, responded and recovered together for the betterment of all.

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Appendix A – Survey

Email Preamble

Thank you for considering taking the time to respond to this survey. The survey is anticipated to take about 10 minutes of your time. Deadline for inclusion in the research project is **Friday, November 21, 2014**.

As an emergency program coordinator for local government, your experience and perspective are a key component of this research. **If you are not the emergency program coordinator, please consider forwarding this survey to the appropriate individual. Thank you!**

Survey link: <http://fluidsurveys.com/surveys/sybillesanderson/emergency-management-integration/>

Survey questions were designed to identify ways that emergency management principles are integrated into local government corporate culture, the degree to which integration has or has not occurred and finally to identify potential best practices for integrating emergency management into the corporate culture of local governments.

This survey is part of a Capstone research project being conducted for completion of the JIBC Bachelor of Emergency and Security Management Studies.

All responses are voluntary and will be kept confidential. Responses will not be identified by individual or community. All responses will be compiled together and analyzed as a group; however, given the relatively small size of the sample group (171 potential participants), respondents should be aware that their responses might identify them to the researcher. All responses will be destroyed once the research paper is completed in December 2014.

If you have any concerns about the survey, please contact: Sarah Wareing, Program Director and Faculty Advisor, JIBC.

If you would like a copy of the final research paper, please email Sybille Sanderson at sybille.sanderson@telus.net and request a copy. Your request will not identify whether or not you participated but simply that you are interested in the research topic.

Thank you very much for considering taking the time to complete this survey. Your responses are greatly appreciated!

Sybille Sanderson
sybille.sanderson@telus.net

Survey Questions

1. By completing this survey I give consent for my responses to be used in this capstone project:

- Yes (will be able to proceed with the survey)
- No (will be thanked for their interest in participating and directed out of the survey)

2. Are you working as a designated emergency program coordinator for a local government in British Columbia?

- Yes (will be able to proceed with the survey)
- No (will be thanked for their interest in participating and directed out of the survey)

3	<i>Has the local government conducted a Hazard, Risk and Vulnerability Analysis (HRVA) recently?</i>									
	Within 1 year		Within 2 years		Within 3 years		Within 4-10 years		Never	

4	<i>Which departments of the local government participate in the HRVA process? (please check all that apply)</i>									
	Planning		Engineering/Public Works		Senior Management		Elected Officials		Emergency Management Committee	
	Other, please specify:									

5	<i>Which departments of the local government receive the HRVA results? (please check all that apply)</i>									
	Planning		Engineering/Public Works		Senior Management		Elected Officials		Emergency Management Committee	
	Other, please specify:									

6	<i>Is the HRVA information used by your planning department?</i>									
	Often		Sometimes		Occasionally		Seldom		Never	

7	<i>How is the HRVA information used by your planning department? (please check all that apply)</i>									
	Not used		Land-use planning		Subdivision planning		Zoning Bylaw development		Geographical Information Systems (GIS)	

	Other, please provide example:
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8	<i>Is the HRVA information used by your engineering/public works department?</i>								
	Often		Sometimes		Occasionally		Seldom		Never

9	<i>How is the HRVA information used by your engineering/public works department? (please check all that apply)</i>								
	Not used		Infrastructure planning		Water Systems		Sewer Systems		Emergency Response Plans
	Other, please provide example:								

10	<i>Does the local government actively participate in Business Continuity Management?</i>								
	Often		Sometimes		Occasionally		Seldom		Never

11	<i>Are Emergency Management and Business Continuity Management working together?</i>								
	Often		Sometimes		Occasionally		Seldom		Never

12	<i>Do you think that it is important to integrate emergency management into local government corporate culture?</i>								
	Critical		Very Important		Important		Somewhat Important		Not Important

13	<i>If you consider emergency management integration unimportant, why not? (please share your reasons)</i>
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14	<i>If you consider emergency management integration important, why? (please share your reasons)</i>
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15	<i>What advice or best practice would you share with new emergency program coordinators about emergency management integration into local government?</i>
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16	<i>To what extent is emergency management integrated into your local government?</i>
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	76 – 100%		51 – 75%		26 – 50%		1 – 25%		0%
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17	<i>Have you experienced resistance from other departments not wanting to work with emergency management?</i>								
	Often		Sometimes		Occasionally		Seldom		Never

18	<i>Do local government departments participate in emergency program training and exercises?</i>									
Training		Often		Sometimes		Occasionally		Seldom		Never
Exercises		Often		Sometimes		Occasionally		Seldom		Never

19	<i>What is the population range for your local government?</i>								
	75,001+		25,001 – 75,000		10,001 – 25,000		5,001 – 10,000		1 – 5,000