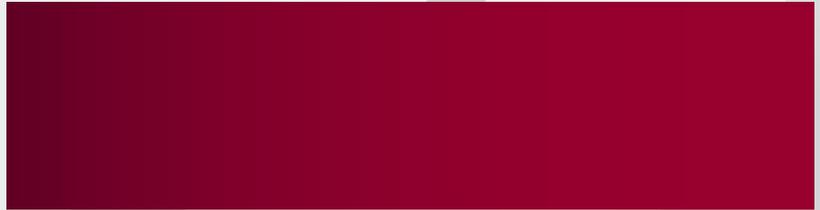




**THE HARRIS  
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Memorial University







# Strategic Risk Management in the Municipal and Public Sector

An Exploration of Critical Success Factors  
and Barriers to Strategic Risk  
Management within the Province of  
Newfoundland and Labrador



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5/1/2010

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## Acknowledgements

The following research was conducted over a two year period and involved many individuals. The following made significant contributions to this report and their insight was instrumental in completing the research.

The principal researcher would first of all like to acknowledge the work of Mark McGrath who was the main student researcher in the report and was especially important in organizing the content analysis of the municipal plans. Mark was truly an exceptional research assistant.

Second, the work of Julie Sheppard, a MBA student, in helping organize and facilitate some of the interviews at the beginning of the project was incredibly important.

Third, the work of MBA students Megret Yabsley and Shauna Clarke in the analysis of the subject of risk management with its implications to both risk culture and governance were invaluable.

Also the continual insights of the principal researcher's MBA students as well as colleagues were greatly appreciated.

Finally, the author would like to acknowledge the assistance of a number of individuals particularly Craig Pollett from Municipalities Newfoundland and Labrador, the Department of Municipal Affairs, Province of Newfoundland and Labrador, the local Newfoundland Risk and Insurance Management Society Chapter as well as specific individuals in the risk management community including Craig Rowe, Betty Clarke, Marilyn Leonard and Elaine Hendry were greatly appreciated.

The principal researcher would like to thank the Harris Centre for their financial assistance and acknowledge the parallel support of the Social Science and Humanities Research Fund in supporting this research.

## Executive Summary

The notion of risk as a fundamental part of strategic management has become increasingly important in organizations. The rise of concepts such as ERM, Integrated Risk Management, sophisticated approaches to financial risk by both financial and non-financial organizations, and an emphasis by regulators on risk related issues manifests this importance. However, ERM is a relatively recent management activity and has not been fully implemented in most organizations especially those in the public sector. Moreover there has been little academic research about its success or the barriers to furthering its progress. In particular, very little has been published about attempts to identify and manage strategic risks while integrating them into an organization-wide risk management framework.

From a regional policy development perspective, public sector organizations in the province of Newfoundland and Labrador will be facing substantial strategic risks in the coming years in how to best allocate resources emerging from natural resources royalties as well as understanding the twin factors of a declining birth rate and out-migration. Should resources be invested in municipal governments that cannot be economically and administratively sustainable? What are the risks in not managing the potential 'windfall' from oil and gas revenue? Moreover, what should the role of public sector managers at both the municipal and provincial levels be in addressing these risk questions?

Using content analysis and semi-structured interviews, we use a mixed methodology approach to explore the question of barriers and key success factors of strategic risk management within municipal governments and the public sector. Specifically our research collates information on public sector risk management while addressing the practice of public sector strategic risk management through a series of semi-structured interviews and content analysis of municipal plans. Finally, we explored the potential barriers and key success factors to addressing strategic risk management in the province of Newfoundland and Labrador.

Findings included that there were a wide range of risks being identified in the municipal plans within the province's municipal plans including the following breakdown of types of strategic risk:

#### Types of Strategic Risk Observed

Classification of Risk	Frequency of Risk
Financial	4
Operational	21
Economic	42
Environmental	38
Legal	0
Political	2
Market	9
Social	15
Technological	1

In the research it is noted that there were some specific barriers to municipal strategic risk management including the state of municipal planning documents, lack of clear implementation plans and an apparent non-identification of flood risk.

Two major themes emerged: the importance of risk culture and methodologies as well as risk management processes and models. We believe these two major themes have significant implications on public sector risk management as well as for researchers in this area.

Ultimately we conclude that this is an area that needs further research including understanding how risk management varies across different public sector activities. We found that risk decisions and organizational cultures are complex processes and systems. The need for a common methodology and approach to address risk management at all levels of the public sector is noted. Other recommendations emerging from the research include better risk identification, the use of third parties in assisting the development of municipal plans and dealing with specific risks that are relevant to the province of Newfoundland and Labrador including flood and economic risks.

Examining public sector risk management is an opportunity for researchers as well as the university. Better understanding and management of strategic risk can lead to more effective strategy development and planning ultimately leading to better communities and province.

## Introduction

As more organizations – both private and public - are focusing on systemic and controllable risks, as well as Enterprise Risk Management (ERM), a question emerges as to how this fits within a public sector organization managing its strategic objectives. Moreover, how does a public sector organization manage ‘strategic risks’? The purpose of our research is to examine strategic risk management in provincial and municipal governments as well as barriers and key success factors emerging.

The notion of risk as a fundamental part of strategic management has become increasingly important in organizations. The rise of concepts such as ERM, Integrated Risk Management, sophisticated approaches to financial risk by both financial and non-financial organizations, and an emphasis by regulators on risk related issues manifests this importance. However, ERM is a relatively recent management activity and has not been fully implemented in most organizations especially those in the public sector. Moreover there has been little academic research about its success or the barriers to furthering its progress. In particular, very little has been published about attempts to identify and manage strategic risks while integrating them into an organization-wide risk management framework (Gates 2006).

From a regional policy development perspective, public sector organizations in the province of Newfoundland and Labrador will be facing substantial strategic risks in the coming years in how to best allocate resources emerging from natural resources royalties as well as understanding the twin factors of a declining birth rate and out-migration. Should resources be invested in municipal governments that cannot be economically and administratively sustainable? What are the risks in not managing the potential ‘windfall’ from oil and gas revenue? Moreover, what should the role of public sector managers at both the municipal and provincial levels be in addressing these risk questions?

In order to address questions on the management of strategic public sector risks, our research explores an approach to strategic risk management at a provincial and municipal level specifically within the province of Newfoundland and Labrador.

There is no commonly accepted standard definition of strategic risk. Much of this is no doubt due to the complexity of the concept of strategic risk. No single quantitative measure will prove satisfactory in all strategic situations. Moreover the literature shows that those risks that can be precisely quantified receive most of the attention from academic researchers, as well as risk managers. While 'soft risks', however significant, often receive little notice (Gates 2006; PricewaterhouseCoopers 2005).

The perplexing element for public sector risk managers is that the majority of the risks they face are essentially 'soft risks'. These risks are ultimately more difficult to manage through traditional avenue such as risk transfer. Yet it is ultimately important that the public sector not ignore these strategic risks.

Slywotzky and Drzik (2005) define strategic risk as "an array of external events and trends that can devastate (an organization)'s growth trajectory and shareholder value" (p. 80). Chapman (2006 p. 225) goes further defining strategic risk as:

*Adopting the wrong strategy, failing to execute a well-thought out strategy or not modifying a successful strategy over time to reflect changes in the business environment are forms of operational risk. Strategic risk, then, may be defined as the risk associated with initial strategy selection, execution, or modification over time that results in a lack of achievement of overall objectives.*

An alternative definition proposed by Johnson et al. (2006 p. 369) indicates that "strategic risk can be seen as the probability and consequences of a failure of strategy". The interesting element of Johnson's definition is that it focuses on the 'strategic' rather than solely the 'risk'

element. It may also have more relevance to the public sector in that the provincial and municipal governments develop strategic plans as part of their governance and operations.

It is important to note that strategic risk is not just about the management of risk but also that of strategy as outlined by Chapman (2006). For example, the likely return from a particular strategy or planning process may be seen as an important part of its acceptability. Investigating the risk of pursuing a particular strategy or plan should therefore be another method of examining its suitability.

The practitioner literature emphasizes the importance of strategy, decision making and implementation management in addressing risk within an organization. The academic literature has also been robust in the study of financial risk management. Strategic risk is particularly important when public sector organizations are concentrating on developing a cohesive and consistent strategy and plan. Yet, what happens if the strategy does not work? If it does not meet wider societal objectives - have public sector organizations wasted resources on its development and the planning process?

Using content analysis and semi-structured interviews, we use a mixed methodology approach to explore the question of barriers and key success factors of strategic risk management within municipal governments and the public sector. A mixed methodology approach may be seen as more appropriate in exploratory studies (Bryman and Bell 2007). Specifically our research collates information on public sector risk management while addressing the practice of public sector strategic risk management through a series of semi-structured interviews and content analysis of municipal plans. Finally, we explore the potential barriers and key success factors to addressing strategic risk management in the province of Newfoundland and Labrador.

## Background

Governments have always been concerned with the protection of their citizens from risk. However, it may be argued, that they now have to deal with the protection of their citizens from a wider range of risks, emanating from a broad spectrum of public services currently provided.

One of the prominent methodologies and approaches to managing risk has been the COSO framework. In 2004, the Committee of Sponsoring Organizations of the Treadway Commission (COSO), a prominent proponent of risk management, developed the Enterprise Risk Management – Integrated Framework to assist organizations in managing risks. While building upon its earlier internal control framework, the ERM framework provided organizations with an encompassing approach to recognizing and managing risks. According to COSO,

“Enterprise risk management is a process, effected by an entity’s board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives” (COSO, 2004, p.2).

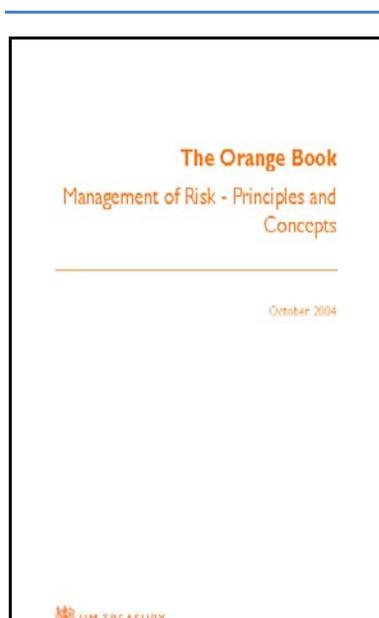


**Diagram 1 – COSO Framework**

Government departments at a provincial and municipal level are responsible for services such as the provision of health care and education, protecting the environment, regulating industry and the payment of social services. All involve some degree of risk. Moreover, provincial and municipal governments have to deal with a finite amount of resources in addressing these risks. The identification of the ‘strategic’ risks that provincial and municipal governments need and want to manage becomes increasingly

important within a context of finite resources. Risk is therefore an essential element in any strategic planning.

While there has been development of risk management frameworks at a federal level in Canada and in some cases at a provincial level (specifically we found in British Columbia) there is no clear picture of strategic risk management practices within the public sector. Ultimately, as indicated by international developments, the ability to develop a framework for managing risk must be vitally important for municipal and provincial governments in managing the services that they offer their citizens.



**Diagram 2 – The Orange Book**

Risk within a public sector organization is much broader than the traditional private sector financial or capital project risks. In the United Kingdom, the Treasury's Orange Book on risk management which drives local authority (municipal government policies) recommended that public sector bodies should take into consideration three main categories of risk: external risks, operational risk and risk associated with organizational change. The external risk category includes political, economic, socio-cultural, legal/regulatory and environmental risks. Operational risks are associated with the delivery of services and/or products, as well as the availability of internal

organizational capacity, including risk management expertise. Risk associated with organizational change refers to all activities and actions going beyond current organizational capabilities (HM Treasury 2004).

While a consistent approach to risk management has been established in the United Kingdom, the same does not hold true at all levels of government for Canada. The need for an approach

to risk management in the public sector that encompasses external, operational and organizational change risks within a Canadian context therefore becomes apparent. Moreover, the strategic needs of the provincial and municipal governments in Newfoundland and Labrador, over the next five to ten years, reinforce the need for an approach that maximizes opportunities and minimizes the hazards in addressing strategy and planning.

The exception to a lack of a consistent approach to risk management within the public sector Canada is at the federal level. The federal government's Treasury Board has published an approach to risk management<sup>1</sup>. While there was identification of best practices as part of the federal government guidance, this was focused on a wide range of organizations and was given in aggregate rather than focusing on the needs of provincial and municipal governments.

There has also been some guidance on risk management by provincial governments particularly in British Columbia but once again the focus has either been on operational<sup>2</sup> or sector specific risks<sup>3</sup>, rather than the broader area of risk in strategy and planning. While public sector institutions, such as universities<sup>4</sup>, have developed approaches to risk management there would seem to be no consistent approach. A gap then emerges as to the role of risk in strategy and planning within public service organizations.

Internationally, there would seem to be more guidance on the area of risk management at all levels of government. As outlined above, the governments in the United Kingdom have done much work to focus on risk management (cf. Chapman 2006; HM Treasury 2004; NAO 2000). In the United States, there has also been an attempt to understand some of the risks facing public sector organizations and there have been associations formed to address risk particularly from

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<sup>1</sup> [http://www.tbs-sct.gc.ca/pubs\\_pol/dcgpubs/RiskManagement/siglist\\_e.asp](http://www.tbs-sct.gc.ca/pubs_pol/dcgpubs/RiskManagement/siglist_e.asp)

<sup>2</sup> <http://www.bcauditor.com/AuditorGeneral.htm>

<sup>3</sup> <http://www.alberta-canada.com/tourism/tourismDevelopment/insuranceRiskManagement.cfm>

<sup>4</sup> <http://www.uofaweb.ualberta.ca/riskmanagement/>

an insurance standpoint<sup>56</sup>. We now address these publications and the theoretical background underlying risk management.

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<sup>5</sup> <http://www.riskinstitute.org/peri/>

<sup>6</sup> <http://www.primacentral.org/>

## Theoretical Background and Review of the Literature

### THEORETICAL BACKGROUND

Risk is an incredibly important concept in the management fields and was traditionally understood in terms of its role in 'taming chance' by quantifying and controlling uncertainty. The early management literature reflects this understanding of risk. Following the work of Knight (1921) and Keynes (1937) distinctions are made between risk – where probabilities are known – and uncertainty – where they are unknown (Bernstein 1996; Hopkins and Nightingale 2006).

Most organizations have viewed the process of risk management primarily as an issue of compliance with statutory or regulatory requirements. Risk management within organizations has traditionally occurred within specific areas – technology, regulatory, financial, environmental etc. – with little or no coordination. Major 'risk' events such as September 11 and Enron made it increasingly apparent that the processes, policies and procedures of managing organizational risk must be a cohesive, constant analysis of both the internal and external organizational environment (Grant 2007; McGee 2005). After the major 'risk' events of the last twenty years, the literature suggests that a concentration on compliance with statutory regulatory requirements as the driver for risk management within an organization may not be an effective motivation for the management of risk.

We have identified what risk management is, now let us define why it is important. A definition by Hill gives a good description of why risk management is important in the public sector:

“The concept of risk has captured a growing importance in modern society, reflecting the public’s desire for safer foods and drugs, a cleaner environment, and safer products alongside higher standards of living... Risk management reflects a desire to improve decision making under uncertainty: to maximize the benefits and to minimize the costs.”  
(Hill, n.d., p.3).

Moreover, according to a 1999 KPMG study prepared for the Treasury Board of Canada, there are numerous benefits to implementing risk management practices. Some of the benefits reported in the study included:

- Achievement of organizational objectives.
- Better focus on business priorities. Additionally, it enables managers to focus their resources on the primary objectives. Resources are not re-directed to deal with problems. This results in increased confidence of shareholders and ministers. Taking action to prevent and reduce loss, rather than cleaning up after the fact, is an effective risk strategy.
- A cultural change that supports open discussion about risks and potentially damaging information. The new culture tolerates mistakes but does not tolerate hiding errors. Also, the culture emphasizes learning from the mistakes.
- Improved financial and operational management by ensuring that risks are adequately considered in the decision-making process. Improved operational management will result in more effective and efficient service delivery. By anticipating problems, managers may have more opportunity to react and take action. The organization will be able to deliver on its service promise.
- Strengthening of the planning process and a way to help management identify opportunities.
- Increased accountability of management in the short term. In the longer term, increased overall management capabilities.
- Increased value (private sector comment) (KPMG, 1999, p.14).

Ultimately the importance of risk management would seem to be clear. The contemporary understanding of public sector risk management has involved a broadening of the traditional bureaucratic approach to risk beyond the boundaries of purely financial risks. However, evidence suggests that, in reality, public sector risk management does not always match the rhetoric (Hood et al 2007).

Although financially measuring all private sector risks is not always straightforward, the primary focus, and the usual formalization of risk, is based around uncertainty and its effect on financial performance. Whilst the public sector has become much more conscious of financial performance, its risks are more often closely related to wider societal risks and to uncertainties in service delivery – risks that by definition are more likely to be qualitative. Hood and Rothstein (in NAO, 2000) argue that business risk techniques could be integrated with managing public sector risks, but caution that (p. 30)

Business risk management is emphatically not a panacea for solving all the intractable polyvalent policy problems faced by government.....Nor is it something that can effectively be done by numbers in an unreflective way.....Achievable successes are likely to be limited and in the middle range....

This key issue aside, successful implementation of risk management in the public sector means a proactive rather than reactive approach and enabling management to take actions prior to the occurrence of risk. A formalized approach for risk assessment and management can ultimately contribute towards success in strategy and planning as well as overall operations of the public sector organizations (Hood et al. 2007; Ward and Chapman, 1995).

#### **PUBLIC SECTOR RISK MANAGEMENT IN THE LITERATURE**

There are a number of specific risk management studies that are focused on the public sector. European institutions are one of the leading developers of risk management standards. The Institute of Risk Management and Association of Local Authority Risk Managers (ALARM)

published in 2002 a *Risk Management Standard* as a best practice guide recognized throughout Europe and internationally. Also the United Kingdom's Treasury has produced in 2004 a *Management of Risk – Principles and Concepts* (subsequently labelled the 'The Orange Book') which has been influential in the development of risk management at a local authority (municipal government) level.

However, the development of the Australian standard (AS/NZS 4360:1995) and subsequent ISO31000 has been the major global influence on risk management practices and models. Australia, as a leading developer of guidance and methodology on public sector risk management, has produced a number of specific studies that are aimed at practicing municipal risk managers. The first publication was the *Guidelines for Managing Risk in the Western Australia Public Sector* (1999) which was produced by the Government of Western Australia. This 34 page document covers sections such as the process of managing risk and documenting it as well as a risk management checklist. The guidelines also contain case studies and a glossary of key risk terms.

Another Australian example would be Cameron (2003) who produced *Managing Risk Across the Public Sector* for the Auditor General of Victoria. This 106 page document deals with risk management in Victorian public sector organizations, along with a state-sector risk management framework and case studies. A subsequent (2004) publication by the same author *Managing Risk Across the Public Sector: Good Practice Guide* was an eight page document containing information about the risk management process, a risk management check list, as well as questions about appropriate risk management strategies.

Other Australian publications include the ACT Government's *Guide to Risk Management* (2004, February) which was designed to identify key risks for outputs, whether for Department, Agency, team or individual activities. The publication outlines how managing risk enables a public sector organisation to achieve its potential with the least interference from a risk eventuating. Moreover, it argues that effective risk management also enables an organization to take advantage of opportunities as they arise. The ACT government also produced a *Risk*

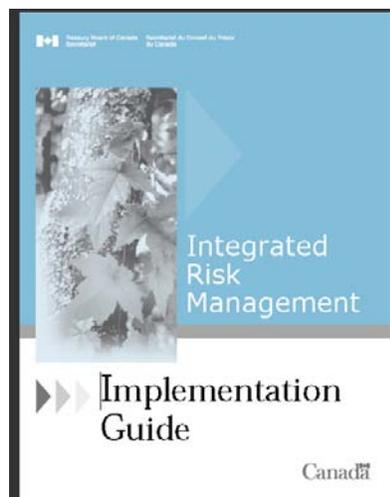
*Management Toolkit* (2004 February) which was developed by its Insurance Authority to assist Government agencies and employees to assess risks and develop risk management plans for their areas or projects. It contains templates and frameworks for identifying and analyzing risk management including a risk matrix.

In the United States, a number of risk publications have emerged specifically from the Comptroller General. The most recent, a 2008 report entitled *Highlights of a Forum Convened by the Comptroller General of the United States*, speaks about how the terrorist attacks of September 11, 2001 as well as Hurricane Katrina that result in homeland security risks varying widely. The forum outlines how the United States can neither achieve total security nor afford to protect everything against all risks. It emphasizes that managing these risks is especially difficult in today's environment of globalization, increasing security interdependence, and growing fiscal challenges for the federal government. The Comptroller General in the document defines risk management as a process that helps policymakers assess risk, strategically allocate finite resources, and take actions under conditions of uncertainty. Forum participants discussed risk management practices currently used or being considered in the private and public sectors, such as the position of Chief Risk Officer (CRO). For the purposes of municipal risk management, it was noted that private sector CROs communicate information about risks to the business executives responsible for mitigating risks and steer mitigation efforts. A government CRO could therefore address the need for leadership in public sector risk management initiatives, such as improving emergency response and disaster recovery efforts.

Another publication on risk management emanating from the United States is Jenkins' (2007) *Applying Risk Management Principles to Guide Federal Investments* (United States Government Accountability Office). In this publication it outlines that since the terrorist attacks of September 11, 2001, and the subsequent creation of the Department of Homeland Security (DHS), the federal government has provided DHS with more than \$130 billion in budget authority to make investments in homeland security. However, as the United States

Government Accountability Offices (GAO) has reported, this federal financial assistance has not been guided by a clear risk-based strategic plan that fully applies risk management principles. Jenkins discusses the extent to which DHS has taken steps to apply risk management principles to target federal funding for homeland security investments (1) in making grant allocations, (2) in funding transportation and port security enhancements, (3) in other DHS mission areas, and (4) at a strategic level across DHS.

Walker (2005) is another publication from the Department of Homeland Security entitled *Risk Management Principles Can Help DHS Allocate Resources to Highest Priorities*. In this publication it outlines how previous GAO work has outlined the nation's growing fiscal imbalance and called for a fundamental re-examination of the base of the federal government. The significant resources directed to the Department of Homeland Security (DHS) indicate that a robust homeland security program is viewed as critical to the protection and prosperity of Americans. Walker addresses the need for a fundamental re-examination of the base of government, the role that performance budgeting tools can play in helping inform agency activities, and DHS's use of performance budgeting and risk management concepts. It also includes examples from GAO work on homeland security issues that highlight DHS attempts to define an acceptable and achievable level of risk.



**Diagram 3 – Integrated Risk Management**

In Canada the first study that emerged on public sector risk management was *Best Practices in Risk Management: Private and Public Sectors Internationally* (April 27, 1999). This was a KPMG study prepared for Treasury Board of Canada Secretariat. However, the most influential publication is from the Treasury Board of Canada Secretariat's *Integrated Risk Management Framework*. Written by

Robillard this 2001 publication is an attempt to strengthen risk management practices within the Public Service. In doing so, Robillard argues that an Integrated Risk Management Framework supports the four management commitments by the federal public service: citizen focus, values, results and responsible spending. An Integrated Risk Management Framework advances a citizen focus by strengthening decision-making in the public interest and placing more emphasis on consultation and communication. Similarly, it respects core public service values such as honesty, integrity and probity at all levels, and contributes to improved results by managing risk proactively. Robillard further argues that integrated risk management supports a whole-of-government view grounded in rational priority setting and principles of responsible spending.

Another important publication that is widely used in Canada is Stephen Hill's (N.D.), *A Primer on Risk Management in the Public Service* from the University of Calgary. Hill's primer is not meant to be an exhaustive review or treatment of risk management. Rather, the intent is to create a common point of departure for learning and work on what constitutes good risk management and what obstacles might be encountered in incorporating risk management into government decision making.

However, in our review, there has been a paucity of academic research on risk management specifically in the municipal public sector. Yet there are some good examples from which to build a body of academic research. Hood and Young (2005) published "Risk financing in UK local authorities: is there a case for risk pooling?" in the *International Journal of Public Sector Management*. Hood and Young argue that since the early 1990s there has been a growth in local authorities of risk management. However, despite a range of different strategies, initiatives and practices the issue of financing the risks to which authorities are exposed has remained problematic. Hood and Young (2005) outline the traditional dependence on the commercial insurance market has proved to be a flawed strategy and analyze an alternative risk financing strategy which has been successful in local authorities in other countries, that of risk pooling.

In another academic study, Hood and Kelly in 1999 published “The Emergence of Public Sector Risk Management: The Case of Local Authorities in Scotland” in *Policy Studies*. In this paper they examine the role of governments in the communication and management of societal risk in the insurance market in Scotland. Further research on societal risk with an emphasis on the role of the public sector includes Gaskell (2006) on risk colonization, Renn (1998) on public perception of risk, Rothstein (2006) on institutional risks as well as Fromm (2006) on risk management policies.

More specific examples of public sector risk management literature includes McCloskey and Smith’s (1998) “Risk Communication and the Societal Amplification of Public Sector Risk” in *Public Money & Management*. McCloskey and Smith argue that concerns exist within the public sector about the ability of organizations to communicate issues of risk. These concerns include: the nature and magnitude of risks; the vulnerability of those who may bear the consequences associated with an event; and the sense of helplessness felt by victim groups. Apart from the public sectors role as risk generator, regulator and communicator, it also has some responsibility for dealing with the consequences of a major catastrophic event through agencies such as health care and the emergency services. Under certain conditions, McCloskey and Smith argue, it is apparent that concerns over risk issues can escalate beyond a level expected by those charged with the management of that risk. Within this framework, the effective communication of risk and uncertainty is an integral, but often neglected, part of public sector activities.

From the same journal came Smith and Toft’s October 1998 Editorial on “Issues in the Public Sector Risk Management”. Smith and Toft argue that the dilemma within risk management centers on the manner in which we trade off the risk of harm associated with an activity against the benefits that might accrue from that same activity. For the public sector, which is both a risk generator and a risk regulator, this dilemma is often brought into sharp focus. The period

since 1979 has been one of unprecedented change for the public sector and one that also saw the occurrence of a number of disastrous events in which the public sector played a major role.

More recent academic publications include Ogwenyama and Sullivan who in (2005) published “How Are Public Sector Organizations Managing IS Outsourcing Risks? An Analysis of Outsourcing Guidelines from Three Jurisdictions” in the *Journal of Computer Information Systems*. Ogwenyama and Sullivan argue that in the past few years the *public sector* has witnessed some of the most spectacular information systems (IS) outsourcing failures. The general public are demanding legislation to control outsourcing practice and more accountability from public sector managers. In an effort to better understand the context of IS outsourcing management in the public sector, Ogwenyama and Sullivan analyze the IS outsourcing guidelines of three public jurisdictions: Alberta, Canada; Queensland, Australia, and Texas, USA. These guidelines offer insights into how some public organizations approach managing the risks inherent in the practice of IS outsourcing. Consistent with our approach in the paper, Ogwenyama and Sullivan use a content analysis methodology to identify the IS outsourcing risk factors and management mitigation strategies addressed by the guidelines. Ogwenyama and Sullivan find that IS outsourcing risk factors are widely acknowledged in the literature but are not fully addressed in the IS outsourcing guidelines that public sector managers use for decision making and the management of IS outsourcing engagements. Moreover, Ogwenyama and Sullivan point to the need for better guidelines and more support for public sector managers who must make costly IS outsourcing decisions.

Qiao in 2007 published “Public Risk Management: Development and Financing” in the *Journal of Public Budgeting, Accounting & Financial Management*. Qiao argues that public risk management is a relatively new but important element of public management and public budgeting. Consistent with our findings they argue that research in this area is limited. Specifically they investigate how do public entities use various risk funding techniques (e.g., purchasing insurance, self- insurance, and intergovernmental risk pools) and secondly have

public entities implemented integrated risk management in their risk management practices? Qiao found evidence that integrated risk management is emerging in the public sector.

Finally, Asenova, Bailey, Hood and Manochin in January 2007 examine the Prudential Borrowing Framework (PBF) that is used in the United Kingdom for local authorities. They argue that the contemporary understanding of public sector risk management entails a broadening of the traditional bureaucratic approach to risk beyond the boundaries of purely financial risks. However, they contend that in reality public sector risk management does not always match the rhetoric. This paper focuses on the apparent inadequacy of any risk framework in the current PBF guidance in relation to that which was developed under Public Private Partnerships and Private Finance Initiative (PFI). They argue that the PBF and its associated indicators for local authorities adopt a narrow financial approach and fail to account for the full range of potential risks associated with capital projects. The PBF does not provide a framework for local authorities to consider long-term risk and fails to encourage understanding of the generic nature of risk.

Within the practitioner literature, there are a number of interesting articles literature including Jorgensen in (2006) who wrote in *Risk Management* about the role of benchmarking in the public sector. Benchmarking is a commonly used risk management tool for organizations wishing to continuously enhance their practices and processes. When executed properly, Jorgensen argues benchmarking analyzes and evaluates data in many areas, such as deductibles, program costs, attachment points, limits, coinsurance, market capacity, and retentions, in order to cut costs and losses. Jorgensen offers advice on how to implement benchmarking successfully. Rowe (2004) in "Managing Risk in the Public Sector" in *Risk Management* discusses issues related to public sector risk management. Public organizations, such as municipalities or public utilities, are generally large and slow-moving, making it difficult to get any sort of risk management plan up and running. Given their nature, public entities are also especially open to scrutiny from the media and the public. Rowe argues while this kind of oversight keeps people honest, it makes public entities more susceptible to defamation

lawsuits, claims of unfair trade practices and reputation risk. Additionally, public entities often undertake high-risk activities that private firms would never consider without receiving a decent profit to offset the risk exposure. Political concerns further exacerbate these difficulties. After election time, campaign promises are expected to turn into reality, often leaving bureaucrats in the difficult position of implementing programs that are costly, risky and cumbersome. Given such political motivations, Rowe argues, and the fact that all constituents must be considered shareholders, demands are endless and therefore, being able to find the necessary resources to commit to risk management is difficult.

We also note a number of risk management associations (such as the Risk and Insurance Management Association) that have some excellent guidance for practitioners.

## Methodology

Our research had two phases:

In *Phase 1* we examined whether A Strategic Risk Methodology for the Public Sector Be Developed? Our review of the literature showed that there is existing literature on strategy and risk methodologies in the public sector. We were able to confirm a preliminary methodology for examining strategic risk (Cooper and Hsiao 2007 – see Appendix A) and this was used as a starting point. Our initial findings in a review of the literature validated our approach and methodology.

Secondly, we confirmed our methodological approach by speaking to a number of experts on risk management in the public sector. We took a number of field research trips to accomplish this task. We visited the Centre for Risk Management at the University of Southampton in the United Kingdom in June 2009 where we interviewed and spoke to a number of subject matter experts in the area of public sector risk management. On the same trip, we were also able to interview UK government officials who are experts in the field of public sector risk management, Chief Risk Officers and as well as management consultants in the area.

Within Canada, we attended two national Risk and Insurance Management Society (RIMS) conferences (in Toronto – September 2008 and St. John’s September - 2009) where we spoke to practicing risk managers and other stakeholders (such as insurance brokers and adjusters) in the public sector risk management field. While in Toronto, we were also able to sit and observe (as well as take thematic notes) in a closed meeting of over fifty municipal risk managers across Canada.

In September 2008, we also went to Ottawa to attend a conference on public sector risk management from the Conference Board of Canada and to interview conference attendees. Specifically we interviewed individuals responsible for risk management policy development in

the public sector and sought guidance on how methodologies were developed for the federal government.

Throughout 2009, field research trips were also conducted to Montreal and Calgary where we spoke to individuals involved in the risk management field. In total we completed over thirty interviews ranging with individuals involved in public sector risk management from British Columbia to Newfoundland. All interviews while not recorded had detailed notes taken during each interview and these were then collated for purposes of analysis.

The approach to the interviews was to use a semi-structured interview format (Prasad). We used a semi-structured interview to seek feedback on how strategic risk was managed in the public sector and how practicing risk managers perceived strategic risks. We also did presentations to municipal leaders in Newfoundland and Labrador and across Canada to seek their feedback. Our interview questions can be found in Appendix B. Our approach was approved by Memorial University's ethics committee before study commenced.

It is important to note we used an exploratory approach (cf. Bryman and Bell 2007) to guide our research. As a result, we were more focused on exploring the development of public sector risk management methodologies and role of risk managers rather than an academic contribution to research methodologies related to the use semi-structured interviews.

In Phase 2, we attempted to develop a number of cases to demonstrate strategic risk analysis and evaluation within the public sector. Initially, we wanted to identify cases that were involved with managing strategic risks in the public sector specifically at a municipal government level in the province of Newfoundland and Labrador. However, we found no cases available to guide and shape our research. We did however develop a number of interviews into vignettes one of which is detailed below in our findings. Given our lack of case studies, we therefore decided to focus our research on a content analysis of municipal plans in Newfoundland and Labrador to guide our research and ensure a contribution to the academic field.

Content analysis, as a class of methods at the intersection of the qualitative and quantitative traditions, is used for rigorous exploration of many important but difficult-to-study issues of interest to management researchers (Carley, 1993; Morris, 1994; Woodrum, 1984). Shapiro and Markoff produce a minimal and encompassing definition of content analysis that we also adopt: “any methodological measurement applied to text (or other symbolic materials) for social science purposes” (Shapiro & Markoff, 1997, p. 14).

Content analysis is approach when examining existing plans and documents (Abrahamson & Hambrick, 1997; Bowman, 1984; Smith et al., 1992). Moreover, there is a wide ranging literature on the use of content analysis in the field of organization studies. The most recent comprehensive study is by Duriau, Reger and Pfarrer (2007) who use content analysis to examine the content analysis literature in organization studies. They note that content analysis has been growing in the course of the past 25 years (Erdener & Dunn, 1990; Jauch, Osborn, & Martin 1980) and is a well accepted research methodology in the social and particularly management studies. Further information on using content analysis as a methodology can be found in Krippendorff (2004).

Our approach to the content analysis was done on existing municipal plans for the municipalities of Newfoundland and Labrador. These plans were observed by gaining access to the Department of Municipal Affairs library. As researchers, we went through each municipal plan in the library for identified risks to their community. In total we reviewed over 133 municipal plans. There are 282 incorporated municipalities within the Province of Newfoundland and Labrador. The sample of 133 represents the complete library of municipal plans within the Department of Municipal Affairs and close to 50% of municipalities within the province.

All municipal plans reviews were coded using a taxonomy developed by Chapman (2006). We also reviewed a number of plans for municipalities outside of Newfoundland and Labrador and

in Canada to explore if the Newfoundland and Labrador approach to municipal planning is generalizable. Although there are specific regulations that guide municipal planning in Newfoundland and Labrador (cf. Urban and Rural Planning Act 2000) we would argue that the results can be generalizable to other jurisdictions and provinces. This would involve further research and is outside the scope of the current study.

Identified risks were compiled from the content analysis into a database and coded according to a taxonomy created by Chapman (2006). The risk classification was given from the following nine codes: financial, operational, technological, economic, environmental, legal, political, market, and social (Chapman, 2006, p.133).

Chapman was used because it had the most applicability for the public sector and is a well known reference source for risk management. The risk classifications were then ranked in order based on the frequency of risks mentioned. For a view of the ranking of the classification of risks, please see below.

**Table 1 - Risk Classification and Frequency**

<b>Classification of Risk</b>	<b>Frequency of Risk</b>
Financial	4
Operational	21
Economic	42
Environmental	38
Legal	0
Political	2
Market	9
Social	15
Technological	1

We note that there are limitations to utilizing content analysis. There were certain municipal government documents that were restricted, limiting the researchers from potential valuable information. Secondly, documents were all paper based which limited the use of computer based analytical tools. A final limitation was the actual municipal plans observed. On the days that analysis of the municipal plans was conducted, certain documents were absent. It is also essential to note that from the observed documents many were out of date, and this was a risk in itself. Once again, ours was an exploratory approach and we do not aim to make any significant contribution to the use of content analysis or semi-structure interview research methodologies.

Overall, using an approach of semi-structured interviews and content analysis, we were able to gain a better understanding of the process, issues as well as success factors behind strategic risk in the public sector.

## Discussion and Findings

### NEWFOUNDLAND AND LABRADOR MUNICIPAL PLANNING

Although risk management is somewhat of a new field of study in North America, the people of Newfoundland and Labrador are no strangers to risk. Located at the most easterly point of Canada and lying between the 46<sup>th</sup> and 61<sup>st</sup> parallels, the province of Newfoundland and Labrador is an island surrounded by the Atlantic Ocean and an adjoining land mass located in Eastern Canada (Newfoundland and Labrador Tourism, 2010). Regardless of whether it was the tsunami of 1929, their active involvement in World War II with American military bases across Newfoundland and Labrador, or their role on September 11, 2001, the people of Newfoundland and Labrador have been reacting to risk whether they realize it or not. Even though the inhabitants of the province have been living with risk and reacting to it, the question still remains, “Are the municipalities of Newfoundland and Labrador effectively recognizing and managing strategic risk?”

In conducting this research, we were driven in our research by Beck’s (1992) concept of how society shaped risk as well as how risk is perceived differently in society (Douglas 1992, Hansson 2010, Bradbury 1989, Gephart et al. 2009). However, taking the view of Chapman (2006)

“Governments have always been concerned with the protection of their citizens from risk. However, it may be argued, they now have to deal with risks from a more diverse range of sources, emanating from the broad spectrum of public services currently provided. Government departments are responsible for services such as the provision of health care and education, protecting the environment, regulating industry and the payment of social services. All involve some degree of risk” (Chapman, 2006, p.45).

The identification of the strategic risks that provincial and municipal governments need and want to manage then becomes increasingly important within a context of finite resources.

As outlined in the literature, while there has been development of risk management frameworks at a federal level in Canada and in some cases at a provincial level there is no clear picture of strategic risk management practices within the municipal government sector. The ability to develop a framework for managing risk and particularly strategic risk should be vitally important for municipal and provincial governments in managing the services that they offer their citizens.

One theme from our interviews with public sector risk managers was that the need for an approach to risk management in the public sector below that of Treasury Board that encompasses external, operational and organizational change risks within a Canadian context. Moreover, as we found in our research, the strategic needs of the provincial and municipal governments in Newfoundland and Labrador over the next five to ten years reinforce the need for an approach that maximizes opportunities and minimizes the hazards in addressing risk management. Yet in the province only two municipalities have dedicated risk managers (St. John's who has a subject matter expert who is well known and respected across Canada – Elizabeth Clarke and a relatively new 2009 risk manager in the municipality of Mount Pearl) Ultimately in speaking to risk managers at a municipal government level they had little or no direct involvement in strategic planning. This was also consistent with our interviews outside of the province and in Europe. Risk managers and formalized risk management concepts have little no presence in the development of public sector strategy and planning.

It is important to recognize the scope of municipal governments' activities in the province of Newfoundland and Labrador. Scope of activities highly influences the type and approach to strategic risk (Slywotzky 2007). To determine scope, we used a definition from Municipalities of Newfoundland and Labrador to define the role of municipal government in Newfoundland and Labrador:

“Municipal government is responsible for the provision of services that enhance the quality of life of its citizens that include, snow clearing, fire protection, safe drinking water, sewer, waste management, street paving, street lighting and recreational facilities and playgrounds” (Municipalities of Newfoundland and Labrador, nd) .

Upon analysis and classification of the risks mentioned in the Newfoundland and Labrador municipal plans, the frequency of each risk classification field was calculated using content analysis methodology (Krippendorff 2004). We now outline the classifications of risk in order of most frequent to least frequent and discuss which risks were most apparent within each classification.

#### **ECONOMIC RISK**

The most frequent risk observed throughout the analysis of the municipal plans was economic. Although there is not a universally accepted definition for economic risk, according to Chapman, it is, “the influence of national macroeconomics on the performance of an individual business” (Chapman, 2006, p.287). Within the macroeconomic model is the influence government has in the manipulation of aggregate demand and consumer spending through government policy. Some of the sources of economic risk are due to: a fall in demand, government policies, movement in house prices, exchange rates, and inflation

Of the eighty-eight Newfoundland and Labrador municipalities that mentioned risks in their municipal plan, there were forty-two mentions of economic risk. This is significant as nearly 48% of the municipalities recorded, were affected by economic risk.

In the analysis of the plans, certain trends emerged. Common economic risks that were observed included but were not limited to: limited employment prospects, high unemployment

rates, impacts of the cod moratorium and fishery, one industry towns, closures of mines throughout Newfoundland and Labrador, the closing of the railway, the forestry and forestry related industries, supply and demand of natural resources, and land development issues based on a shortage of land. The majority of these risks would be consistent with activities involved in Newfoundland and Labrador economic development.

One major source of economic risk outlined in a number of the municipal plans was the fishery. The impacts of the cod moratorium imposed on July 2, 1991, left approximately 30,000 people unemployed and have been well documented in local and national media:

“Fish plants closed, boats remained docked, and hundreds of coastal communities that had depended on the fishery for generations watched their economic and cultural mainstay disappear overnight” (Higgins, 2008 B).

This economic blow coupled with recent developments within the province’s forestry and forestry-related industries, and it was unsurprising that this was the main risk observed in the plans.

We were surprised to see the frequency of municipalities mentioning their shortage of land as a risk. With a total area of 405,720 km<sup>2</sup>, the province of Newfoundland and Labrador is larger than three times the area of Prince Edward Island, New Brunswick and Nova Scotia combined (Government of Newfoundland and Labrador, n.d.). Upon further analysis, this shortage of land for development was due to environmental factors such as designated flood risk zones, and erosion.

## **ENVIRONMENTAL RISK**

The second most frequent risk observed within the plans was environmental risk. Chapman summarizes environmental risk as, “the deterioration of bottom-line performance from: increased regulation on energy usage, eroded reputation, brand name and market share from an environmental incident, increased operating costs from the effects of global warming, higher fuel costs as natural resources are depleted and loss of market share to more environmentally ‘savvy’ competitors” (Chapman, 2006, p.307). Some of the sources of environmental risk are: pollution of land, water or air, increased regulation and higher operating costs, prosecution arising from the lack of observance of rules set by a regulatory body, reputational risk from adverse publicity, and severe weather conditions leading to the destruction of facilities.

From the eighty-eight municipalities coded, thirty-eight municipalities identified various forms of environmental risk. This too was significant as nearly 43% of the recorded municipalities of Newfoundland and Labrador experienced some form of environmental risk.

Certain trends as to environmental risk could be observed within the plans. Some of the most common environmental risks mentioned included: hazardous material storage, protection of rivers, avalanche risk, pollution, soil condition, quantity and quality of water supply, sewage treatment and disposal, air quality, storm drainage, erosion of land and flood risk.

Flood risk was an important element emerging from the research. With about 17, 540 km of coastline nearly 90% of the provinces population living near the sea (Batterson & Liverman, 2010), we were not surprised to see municipalities recognizing flood risk. We were, however, surprised to see the magnitude of the frequency of flood risk throughout the municipal plans.

Of the thirty-eight times a risk was coded as environmental, twenty were flood risk. Nearly 53% of the environmental risk observed through analysis of municipal plans was therefore due to

flood risk. Explicitly planning for flood clear would be a clear part of any municipality's strategy. The effects of floods are drastic and the risks are interrelated among other risks in the taxonomy. For example, a flood would be an environmental risk; however the destruction of property and shortage of land would be financial and economic risks.

It is also necessary to consider the implications of both Canadian federal and provincial governments as well as an implied assumption of a political risk. Such was the case in the province when

“Newfoundland joined the Flood Damage Reduction Program in 1981 signing General and Mapping Agreements and two years later a Studies Agreement. Sixteen areas were mapped and designated under the program and remedial measures studies were carried out in four areas. The 20-year flood was used to designate the floodway and the 100- year flood to designate the flood fringe” (Environment Canada, 2009).

For a list of the communities and designated areas, please see Appendix D.

As part of our analysis, we also reviewed whether the municipalities that had received federal government funding and designation had reported their municipality at risk of flooding by cross referencing the risk database. To our surprise, only eight of the twenty-five (32%) municipalities on the list had reported flood risk. Both the federal and provincial governments had deemed it necessary to identify the risks of flooding in these areas, and yet the municipality was unable to recognize this apparent risk within their planning.

#### **OPERATIONAL RISK**

The third most frequent risk observed throughout this project was operational risk. Peccia 2001 states that operational risk is, “the potential for loss due to failures of people, processes,

technology and external dependencies” (Peccia, 2001). Some of the sources of operational risk are: outsourcing, reputational risk, systems risk, regulatory risk relating to lack of observance, certain legal risks, information technology risk, crime risk, and business risk (Chapman, 2006).

From the eighty-eight municipalities that acknowledged risk in their municipal plan, twenty-one identified operational risk meaning nearly 21% of the municipalities of Newfoundland and Labrador studied identified operational risk within their planning. Common operational risks included: limited resource base, lack of defined commercial centres, no proper protection from adverse effects of development, development without proper considerations, incomplete information and assumptions, fire and safety issues, outgrowing and overdeveloping of communities, difficulty to attract workers, non-existent municipal plan, boilerplate municipal plans, lack of implementation plan, and failure to recognize risk.

One operational risk identified through our research was lack of planning documentation. This was obvious given the state of the majority of the municipal plans observed. Not only were they extremely out of date ranging back to the 1970’s and 1980’s, but they also could be considered ‘boilerplate’. Goals and objectives were unclear, and in almost all cases an implementation plan was non-existent.

In our interviews with municipal leaders and managers it was clear that planning documentation was an afterthought and/or only done for government compliance. This creates an implicit operational risk in that if there is no formalized planning or strategy developed then municipalities may face a strategic risk in dealing with future issues that are reoccurrences of older ones (i.e. that were not written down). It was also surprising to see that some municipalities simply did not have a municipal plan present at the Department of Municipal Affairs Library.

**SOCIAL RISK**

The fourth most frequent risk observed was social risk. According to Chapman 2006, social risk comes from changes in society that create changes in demand. This leads to new opportunities and may change businesses' responsiveness to demand and the characteristics of the workplace. Some of the sources of social risk are: poor standards of education, linguistic barriers, decreasing percentage of working population that is of working age, loss of market share, home improvement market, and misaligned marketing strategy (Chapman, 2006).

From the eighty-eight municipalities that identified risk in their municipal plan, fifteen identified social risk within their community meaning approximately 17% of the municipalities identified social risk. Common social risks included: an ageing population, decreasing population, rapidly growing population, out-migration of younger demographic, schooling issues, and a lack of facilities for the older demographic in certain communities. The true impact of the decline of the Newfoundland cod fishery from a social risk perspective could be seen in a number of the plans:

“After the 1992 cod moratorium, Newfoundland and Labrador entered a decade of almost continuous population decline. Out-migration occurred on a larger scale than ever before, the birth rate dropped, and the number of immigrants coming into the province did not offset the number of those leaving. Although urban centres also sustained population losses, it was in smaller communities that the most dramatic changes occurred. Between 1991 and 2001, rural settlements experienced a net loss of almost 48,000 people, representing an 18 per cent drop in population. Areas most dependent on the fishery experienced the greatest losses, including the Northern Peninsula, some parts of the Avalon Peninsula, and the island's northeast and southern coasts” (Higgins, 2008 A).

Ultimately given demographic and socio-economic changes, we would expect that this risk will increase as time develops. Social risk is an important strategic risk for municipal strategic planning processes to recognize and address.

### **MARKET RISK**

The fifth most frequent risk observed in our analysis was market risk. Chapman describes market risk as, “the exposure to a potential loss arising from diminishing sales or margins resulting from changes in market conditions” (Chapman, 2006, p.355). Some of the sources of market risk are: market structure, product life cycle, alternative strategic directions, acquisitions, game theory, price elasticity and distribution strength. Of the recorded eighty-eight municipalities that identified risk, nine identified some form of market risk. That is to say that approximately 10% of the observed municipalities that recorded risk were identifying risks based on market fluctuations. Some of the common market risks included: difficulty in the fishery, mining and forestry industries, decreased production and closure of some of the above mentioned industries, decreased supply and demand for natural resources, and high unemployment rates.

We note that there were not more municipalities mentioning market risk in the form of high unemployment. The province of Newfoundland and Labrador currently has the highest unemployment rate of all the provinces in Canada at a staggering 15.5% according to a Statistics Canada Labour Force Survey released in April 2010 (Statistics Canada, 2010). It was also surprising to see that “one industry towns” do not mention the importance of the market’s role in establishing the price of their commodities and in turn the supply and demand. Both high unemployment and reliance on the market are significant strategic risks that need to be managed.

**FINANCIAL RISK**

The sixth most frequent risk observed was financial risk. “Financial risk is the exposure to adverse events that erode profitability and in extreme circumstances bring about business collapse” (Chapman, 2006, p.203). Some of the sources of financial risk include: liquidity risk, credit risk, borrowing risk, currency risk, funding risk, investment risk, and derivatives. Out of the eighty-eight municipalities that identified risk, four identified some form of financial risk. Only a little less than 5% of the observed municipalities that recorded risks were experiencing financial risk. Common financial risks included: loans, financing issues for projects, competition for government funding, and other general financial risks. The frequency of financial risk being reported may create concerns. In the field research it was apparent by simply visiting rural municipalities of Newfoundland and Labrador that they do not have the finances for basic maintenance to upkeep their community. Moreover,

“As the population of rural Newfoundland and Labrador continues to contract, so too do the incomes of rural municipalities. With fewer people paying property and other taxes, many small communities have less money to spend on new roads, bridges, electricity lines, and other public services or to pay down their debts. It is also less economical for the provincial government to maintain schools, health-care facilities, and other resources in places with shrinking and scattered populations” (Higgins, 2008 A).

It was therefore a major concern and apparent deficiency that municipalities are not seriously acknowledging their financial risk.

**POLITICAL RISK & TECHNOLOGICAL RISK**

The final classification of frequent risks observed was political and technological risk. “Political risk is the uncertainty that stems, in whole or in part, from the exercise of power by governmental actors and the actions of non-governmental groups” (Zonis & Wilkin, 2001). Some of the sources of political risk are: contracts, transition economies, governmental fiscal policies, pressure groups, and terrorism and blackmail. “Technology risk may be defined as

events that would lead to insufficient, inappropriate, or mismanagement of investment in technology, in terms of manufacturing processes, product design and/or information management” (Chapman, 2006, p.264). Some of the sources of technology risk are: informational technology, communications, control technology, information technology governance, information technology projects, and investment in technology (Chapman, 2006). Out of the eighty-eight municipalities that identified and recorded risk in their municipal plan, only two recorded political risks and one mentioned technological risk. This means that a little over 2% and 1% of the municipalities of Newfoundland and Labrador consider themselves to be affected by political and technological risk. The two political risks mentioned were: spending cuts in provincial government spending, and increased competition among municipalities for government funding. It was a concern to see that only two municipalities recognized this risk, as much of the province and especially municipalities rely on federal or provincial government funding for projects. The reliance on government funding makes political risk a huge element in planning and strategy development.

The one mention of technological risk throughout the entire sample of municipal plans observes was a decrease in supply and demand and iron ore due to new technology. This was a serious risk in itself not recognizing the impact technology plays on today’s society. “With increasing uses of technology, many skilled (trained in a specific trade) workers found themselves displaced by machines operating by semi-skilled or unskilled operatives” (McBride & Kealey, n.d., p.31) In our interviews, we noted that technology is playing a vital role in shaping the Newfoundland and Labrador economy positively in such fields as the offshore oil and gas industry and negatively in such fields as the forestry industry. Not addressing technology risk and its impact may once again be a substantial strategic risk for municipalities in their planning.

## Barriers in Municipal Strategic Risk and Planning

After analyzing the municipal plans for the municipalities of Newfoundland and Labrador, it was clear that there were numerous deficiencies in strategic risk and planning. This section outlines the most apparent deficiencies.

### STATE OF MUNICIPAL PLANNING DOCUMENTS

The most recognizable deficiency that was visible from the very beginning of this project was with the municipal plans. It was clear that they had not been consulted or thought about in many years, and sometimes even decades. Some of the municipal plans were close to twenty years old. We initially attempted to develop a framework for risk management at a municipal government level, however as we commenced research on the municipal plans for the municipalities of Newfoundland and Labrador, it was clear that much more work was needed than initially thought. Ultimately beyond the large municipalities we saw little or no formal identification, analysis or management of risk within the municipal plans. In our interviews, we were told that formal risk management planning beyond some of the larger municipalities just does not happen.

The municipal plan, as in any strategic document, is supposed to be a tool used by communities to clearly identify goals, objectives, and limitations. It is impossible to do this effectively when a municipal plan for many years has been expired. In some circumstances we even saw cases of municipalities not updating and amending their plans in close to 30 years. Lack of an updated municipal plan is a strategic risk in itself. We note that the new sustainability plans being now developed by municipalities may be a method of addressing the lack of substance and relevance in the majority of municipal plans observed.

The next common deficiency observed was that most municipal plans were *boilerplate*. It was apparent by analyzing such a large volume of municipal plans that there was a template used

repeatedly. It also appeared plans were being developed because of regulatory requirements and not for the intended purpose of outlining clear and attainable goals, as well as identifying potential threats as part of a strategic development process.

#### **LACK OF IMPLEMENTATION**

It was also apparent that upon analyzing of the plans, there was a need for a section on implementation. There were only a few municipalities that identified their implementation strategy out of the entire province, and some of these seemed unrealistic and lacking in substance. While identifying goals and objectives are important, it is also vital to give careful and methodical consideration to the process of how these goals and objectives are going to be obtained. Had some of these municipalities put more consideration into their implementation strategy, they would have realized how important it is to a municipal plan, and that many of their goals were unattainable.

Upon analysis of the data, a theme emerged as to the limited recognition of risk within the plans. We identified and analyzed 133 municipal plans; however only 88 were recorded in the risk database. This can be explained by the observed municipalities not identifying risk and barriers in their municipal plans with fewer than 69% of the municipalities being recorded in the risk database. It is also noteworthy to mention that on the multiple days that we conducted research at Confederation Building, certain municipalities were not represented with an absence of their municipal plan.

#### **FLOOD RISK**

The final visible deficiency had to do with flood risk. Even though financial resources have been provided from both federal and provincial governments in collaboration with municipal government, there is clearly still an issue. Even after flood risk mapping programs have been implemented, we have still seen drastic flooding causing significant damage in communities

such as Stephenville, Badger, Placentia, and Gambo within Newfoundland. “More than 57 communities in the province have been affected by flooding which has caused over \$40 million in damage over the past 15 years” (Government of Newfoundland and Labrador, n.d). It is even more disturbing to see that the municipalities that are experiencing flooding are also the ones being granted flood designation from the federal government, which poses the question of whether or not this risk is being taken seriously, or the reports are boilerplate with a lack of serious consideration. For an image of the affected areas of Newfoundland, and the economic impacts flooding has caused the province, please see Appendix D.

Ultimately the analysis of the municipal plan leads us to the question why there is a lack of strategic risk planning at a municipal level and what can be done.

Two major themes emerged from our review of the literature, interviews and content analysis: Risk Culture Methodologies as well as Risk Management Processes and Models. We now outline these themes, their impact on public sector risk management as well as concluding with a number of recommendations for practitioners and opportunities for future research.

## Risk Culture and Methodologies

In his book entitled *The Psychology of Risk*, Kiev (2002) explains that organizations can have the appropriate risk management processes and systems in place; however, they must also consider creating a risk-management culture. We were continually told and observed in the research that public sector organizations were different – particularly in relation to their processes as well as culture. Moreover, although in some jurisdictions that there were risk management methodologies – especially in Europe, a theme emerged that the culture within the public sector precluded good risk management practices. This is consistent with Hood et al. (2007) finding that in reality, public sector risk management does not always match the rhetoric. Risk culture therefore is an especially important element when considering the management of risk in a public sector organization.

Before beginning a specific discussion of risk culture, it is important to review the general concepts and definitions of organizational culture.

### ORGANIZATIONAL CULTURE

Culture is sometimes seen as the softer side of an organization (Alvesson & Berg, 1993). Schein (1996) proposes that culture is one of the most powerful influencers on organizational decision making and strategy. Difficult to measure and evolutionary in nature, culture is often viewed as broadly shared and learned experiences, values, meanings, and understandings. It can be represented and communicated in symbols, rituals, myths, stories and legends, and interpreted through events, ideas and experiences. Alvesson (2003) suggests that these elements influence a group's values and assumptions about social reality. As a complex system, organizational culture is viewed as the social glue that holds the organization and its employees together (Ke & Wei, 2007). In some instances organizational cultures may become so pervasive that Arnott (2000) has suggested they can become organizational "cults," which significantly impact the individual employee.

The key elements and definitions of organizational culture presented by Alvesson, Berg, and Ke and Wei are useful in analyzing culture. However, it is the definition by Schein (1992) that offers a new perspective for public sector risk management:

“Culture a pattern of basic assumptions that the group learned as it solved its problems of external adaptation and internal integration 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.12).

Interestingly, Schein has defined culture using the word “problem,” thus implying that culture is developed in response to problems. This is a particularly valuable definition in the context of municipal strategic risk planning as, in our findings, considering a risk is often perceived as a potential threat to or problem in achieving a public sector organization’s operational goals.

An examination of Schein’s definition may provide the basis for defining risk culture. “A pattern of basic assumptions” is a consistent concept in all culture definitions. It speaks to the dominant belief that culture is created through shared understanding of the organization’s norms, values, philosophy, thinking, and business processes. The phrase “what has worked well enough to be valid” demonstrates that past practices contribute to the present culture.

This definition also brings forth three new elements not present in other definitions, namely learning through solving problems, external adaptation and internal integration, and teaching members how to react to a problem. All of these elements have particular relevance to public sector risk management.

Learning through problem solving implies that as a public sector organization takes new approaches to solving problems or managing risks, the organization will learn and the culture will evolve. In our interviews we observed this as a particular barrier to risk management within the public sector. There was a tendency to not want to try anything new, as there were too

many stakeholder interests to manage. A theme emerged from the research that managers within the municipal public sector saw themselves as implementers of council and other government decisions rather than identifying and shaping risk.

External adaptation and internal integration illustrated that culture is not static and is influenced by problems presented in the external and internal environments. Once again, the static nature of some public sector organizations – especially municipal councils - means that external adaptation as well as internal integration will be difficult.

The third element emerging from Schein's definition – teaching members the correct way to perceive, think and feel in relation to the problems – is also relevant to the area of public sector risk management. It implies that organizations can change a culture by teaching members new "correct" ways to respond to problems. We believe this is an opportunity for public sector municipal organizations due to the willingness to increasingly invest in public servants and their education. In our interviews, we also were told how learning opportunities were available – some specifically around risk management.

It is suggested that the Schein (1992) definition of culture could be adapted slightly to define risk culture within municipal and provincial government sectors. The changes to the definition are in italics.

*Risk culture is "a pattern of basic assumptions that the group learned as it identified, evaluated and managed its internal and external risks that have 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 risks".*

While still not a perfect definition, it does incorporate the key elements of assumptions, group learning and teaching, internal and external risks, perceptions, feelings and thoughts.

Moreover, it is a more appropriate definition for examining public sector and municipal risk management.

In their research, Ballou and Heitger (2005) present an approach for creating a risk culture, which builds upon COSO's *Enterprise Risk Management – Integrated Framework*. This building-block approach takes a system-wide view of risk culture; however, it does not take into consideration personal risk decision factors (individual appetite, tolerance, and propensity for risk) that have been identified by Sitkin and Pablo (1992) and are consistent with our research findings.

The reason for ensuring that individuals involved in the public sector are aware of their individual risk appetite, tolerance and propensity for risk is crucial. Regardless of being a behavioural or personality trait, an individual's risk propensity and perception are not easily changed. This will have an impact on recruitment and selection within the public sector if strategic risk management is to be addressed. However, Sitkin and Pablo (1992) offer the following suggestions:

“When individuals are socialized into the value system and traditional practices of the organization, they can come to accept a world view that frames their perceptions of routine and novel problem situations. Organizational members come to view their world through the lens of their organization's culture, which can distort their perceptions of situational risks, sometimes by overemphasizing or underemphasizing risk” (p.21)

Their observation indicates that public sector organizations can influence and create a desired organizational culture and sometimes override the individual's risk propensity and perception. Ultimately we found in our research that this is not happening for public sector and especially municipal government planning.

It is therefore important to note individual and organizational cognitive biases contribute significantly to a risk culture. Drew and Kendrick (2005) present six examples individual cognitive biases that influence attitudes towards risk:

- 1) Positive illusions that lead people to believe that the problem does not exist or is serious;
- 2) Interpreting events in an egocentric manner so that credit and blame is allocated in self-serving ways;
- 3) Overly discounting the future;
- 4) Preferring the status quo and resisting change;
- 5) Not wishing to fix or prevent a problem that does not affect one personally; and,
- 6) Groupthink.

These biases were consistent with findings emerging from the research and echo the academic literature which shows how an individual's risk propensity, risk perception, time horizons, wealth, self-efficacy, and trust influence risk behaviour (Sitkin & Pablo, 1992; Das & Teng, 2001, 2004; Cho & Lee, 2006). As public sector organizations renew themselves due to an aging workforce, it is therefore worthwhile to note these individual and organizational cognitive biases as well as their influence in their municipal planning and strategic risk management.

Unequivocally, we found in our interviews that leadership shapes organizational risk culture. This is consistent with Drew et al. (2006) who suggest that "leadership styles are critically important for developing values, ethical character in followers, culture and organizational building" (p.132). As such, leaders' beliefs, actions, and values often become sources for organizational folklore and organizational reference points. Ultimately the same holds true for public sector organizations.

## Risk Management Processes and Models

One of the other major themes that emerged from the research was the importance of leadership – especially from municipal leaders. According to Lam (2003), leaders are uniquely positioned to set the tone from the top and recommends that CEOs make risk management a priority through words and actions to establish an appropriate culture as well as risk management processes. Schein (1992) further explains that some mechanisms to communicate are conscious and deliberate while others are unconscious and unintentional. A word of caution is given to leaders – a disconnect between actions and words will result in declined trust and a disconnected risk culture. As Bozeman and Kingsley (1998) concluded that leaders “who trust their employees are likely to have employees who will take calculated risks” (p.116).

Trust can therefore be developed when there is an understanding of the processes and approach to risk management. This leads to another emerging theme being the need for a framework or process model that was more focused on municipal risk management – recognizing the specific challenges and opportunities in managing municipalities in the Canadian socio-economic environment. Transparency in the form of formalized approaches to risk management that could be considered by a wide range of stakeholders – municipal leaders, planners, managers as well as external stakeholders such as insurance brokers – would be a definite asset for municipal planning and strategic risk management. Benefits accruing to the public sector that emerged from the research included reduced insurance costs, better contingency planning as well as an increased effectiveness in the working between public servants and elected officials.

As outlined above, there are a number of framework and models available to risk managers. However, they are at levels of government (federal) or international (the Orange Book) which may have little perceived applicability for municipal risk management.

One of the first models we found would be useful for public sector risk management is proposed by Rossiter (2001) who argues strategic risk management requires a strong risk culture and comprehensive risk management program. In her analysis, Rossiter contends there are four key attributes of an effective risk management process – leadership and strategy; accountability and reinforcement; people and communication; and, risk management and infrastructure.

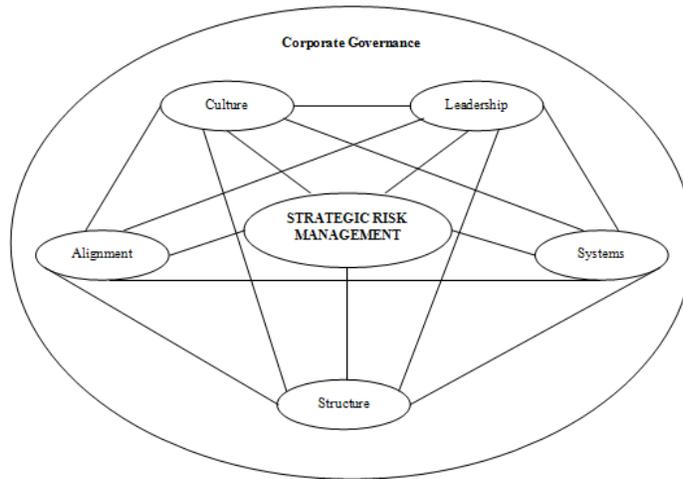
**Diagram 4 - Key Attributes of an Effective Risk Culture**



(Rossiter, 2001, p. 45)

One of the negative elements about this model is that it does not consider the personal factors influencing culture. However, it may be a useful influencing tool for municipal risk managers and would be key for leaders in all sectors of government to understand the challenges in developing appropriate strategic risk management.

Another influencing model in managing strategic risk is one proposed by Drew, Kelley, and Kendrick (2006). They present an integrated, five-element model of corporate governance, which assists organizations in managing risk.



**Diagram 5 - CLASS: Five Elements of corporate governance to manage strategic risk**

(Drew, Kelley, & Kendrick, 2006, p. 129)

Called CLASS (Culture, Leadership, Alignment, Systems, and Structure), the model recognizes the interdependencies of the five elements. This is a particularly beneficial model for municipal planning and strategic risk management as it considers not just organizational culture, but other elements that can shape risk management. Unfortunately, in their description of the organizational culture element, the researchers do not discuss elements related to risk culture or individual risk decision-making that may have particular relevance to public sector organizations. They discuss risk management solely in a broad organizational context.

Another theme that emerging was the need for processes or methodology for managing risk that was consistent with the strategy and planning approaches within municipalities. Obviously a public sector organization's strategy can influence its approach to risk management. The strategy chosen will then instinctively lead to a specific risk culture.

Research shows that if driven by aggressive targets, organizations take greater risks. If an organization or municipal government is mature in its life cycle, there may be a greater inclination to take less risk and maintain the status quo. This is consistent with the findings of Noy and Ellis (2003) who identified that organizations can have more than one risk culture explaining that greater risks are generally taken to support core competencies or to achieve competitive advantage.

Related to organizational strategy and its approach to strategic risk are performance and reference points. These can include benchmarks, performance indicators, and industry/ market comparisons. Drew and Kendrick (2005) explain that an organization's current performance will influence its risk decisions and management. With a "what gets measured, gets done" attitude, performance-driven organizations often have high risk cultures. However, caution is raised that performance indicators may result in poorly assessed risks and can reward unethical behaviour, which raises its own set of organizational risks.

Another theme emerging was that the size of a municipality will also have an impact on strategic risk management. Ultimately this relates to the issues of resources and is consistent with Drew and Kendrick (2005) who stated that risk culture is also influenced by the level of resources at an organization's disposal. Organizational resources can be financial, human capital, knowledge, or technological. With an abundance of resources, an organizational culture may support either a risk-taking risk-aversion culture. Drew and Kendrick explain that "the organization's resource base and strengths significantly influence the inclination to take risks" (p.24). Structures and methodologies that are developed reflect issues around the strategic need to reflect issues of size and resources.

Research has also established a public sector organization's processes and procedures can be a significant contributor its' overall approach to risk management. In their review of public and private structures, Bozeman and Kingsley (1998) found organizations with political control, a

lack of a reward system, high levels of formalization and red tape, bureaucratic structures and goal ambiguity can result in a risk-averse culture. This was consistent with the themes emerging from the research. Bozeman and Kingsley (1998) also found that risk-taking cultures were closely linked to the clarity of an organization's mission. Where organizations experienced high degrees of internal managerial control, they determined that risk taking cultures supported managerial trust in employees. Ultimately the lack of appropriate strategic risk management procedures within public sector organizations means that there is a disregard for formalized planning and as a consequence there is a mistrust of the processes and people involved in strategy and planning.

It is also important to note that organizational processes and procedures do not necessarily lead to a low risk organizational culture. In fact, formalized risk management approaches (COSO, 2004; Lam, 2003; Chapman, 2006) support systematic processes to identify, analyze, and mitigate risks. The presence of these systems does not translate into a risk-adverse culture and/or in appropriate strategic risk management.

Another of the themes emerging from the research was consistent with Drew and Kendrick (2005) as to the importance of knowledge management in addressing risk. An organization that properly manages its knowledge and learns from its past experiences will build confidence in its risk management processes that will lead to a risk-taking culture. Drew and Kendrick (2005) offer the following examples of organizational actions that inhibit risk-taking behaviour:

- 1) Failure to devote sufficient resources to collect information about threats
- 2) Reluctance to share sensitive information
- 3) Gaps in individual knowledge
- 4) Failures to integrate knowledge
- 5) Individual negligence and malfeasance
- 6) Ambiguous lines of responsibility
- 7) Failing to capture lessons learned

## 8) Long term loss of institutional memory (p.25)

Ultimately the opposite of these statements would help to create a risk-taking culture.

A final theme emerging from the research was the importance of communication. Again, there is limited academic research specifically about the linkages between communication and strategic risk management. The predominant risk communication research is about communicating health and safety risks, emergency, and crisis (Conchie & Burns, 2008; Fischhoff, 1995, 2002; Hyde, 2007). Specifically, there is little published research about communication's role in planning and strategy development.

The ability for risk managers and leaders within the public sector to influence and be heard in strategy and planning becomes critical for the management of strategic risk. Otherwise risk management becomes an exercise in managing emerging hazards rather than proactively analyzing and managing risks on a continual, strategic basis.

Formalized approaches to risk management (COSO, 2004; Lam, 2003) reinforce the importance of communicating about risk to achieve integrated risk management. In fact, one of the key building blocks in the COSO ERM - Integrated Framework is "Information and Communication," which involves identifying, capturing, and communicating information that enables employees to carry out their responsibilities (COSO, 2004).

Communications plays a fundamental role in outlining the mission, vision, values and culture of a public sector organization. All of these elements are critical in managing planning and strategic risk management.

Communications can therefore play a fundamental role in outlining the role of risk in planning and strategy development. There are a number of best practices associated with risk

communications (Wolfson, Hammond & Lenzi, 2008; Lam, 2003; Rossiter, 2001; Hanssen, 2005) including:

- Creating a risk management communications strategy to communicate to key stakeholders (i.e. managers, employees, Board of Directors, shareholders, other stakeholders). The formal communications strategy should include the following sections: Internal and External Environmental Analysis; Communications Objectives; General and Strategic Considerations; Communications Approach; Key Audiences; Key Messages; Communications tools; Implementation Dates; and Evaluation Tools
- Clarifying organizational risk expectations to employees
- Developing policies, procedures to support risk culture
- Communicating roles, responsibilities, authorities, and accountabilities
- Monitoring progress and modifying approach as required
- Identification of key spokespeople
- Training and development
- Senior management engagement and support
- Common language across business lines

Consistent with a theme emerging from the research is Hanssen's (2005) belief that an important element of establishing and communicating the importance of risk management is through engagement of senior management and by communicating the organization's risk profile at every opportunity through the use of key messages, goals, strategy and outcomes of risk management. Fischhoff (2002) effectively sums up the importance of formalized risk management communications, "People must understand how big the risks and benefits are (including the associated uncertainties), as well as how these risks are created and controlled" (p.102)

## Conclusion and Areas for Future Research

In their review of public and private sector risk management, Bozeman and Kingsley (1998) determined that neither public nor public sectors have riskier cultures. Rather, they concluded the organizational factors, such as leadership, clarity of organizational goals, processes, and governance. This is consistent with our interviews and would point to the relative heterogeneity we saw in the municipal plans in Newfoundland and Labrador.

Moreover, research conducted by Noy and Ellis (2003) found that an organizational risk strategy is not uniform, but rather varies across organization activities. A strong propensity for risk in activities that support organizational core competencies arises. While interesting, these findings do leave a number of unanswered questions: Does a public sector organization have one overall risk culture or are there various subcultures? If there are sub-cultures, what specifically influences these – managers, leaders, socio-economic factors? Do public sector organizations benefit from having more than one risk culture? These questions are beyond of the scope of this research; however, they may prove to be sources for future research.

From the research conducted on public sector risk management, risk decisions and organizational cultures are complex processes and systems. Research shows that individual risk behaviour is influenced by both risk propensity and risk perception (Sitkin and Pablo 1992). An organizational approach to risk management is influenced by the individual through cognitive biases and individual risk behaviours and by the organization (leadership, organization strategy/ model, resources, performance/ reference points, macro/ micro environment, knowledge management, resources, and communications). These influencing factors offer researchers a multitude of avenues to pursue future risk management-related researched. It is suggested each factor could form the basis of primary and secondary research.

After identifying deficiencies observed throughout the research on strategic risk management within the public sector, there are a number of recommendations for municipalities and other public sector organizations.

The capability for a public sector organization to manage their risk begins with recognizing and identifying it. It is therefore recommended public sector organization seriously consider creating a new municipal plan or strategy that is updated on a regular basis. These plans should include clear objectives and attainable goals. It is also essential for municipalities and public sector organizations include a thorough implementation plan. It is also recommended that each municipality carefully consider key risks and barriers that they foresee as problems and potential blockages to their goals and objectives. Risk management should be an essential part of municipal and public sector planning and strategy development.

Keeping in mind that, “most people who serve on municipal council are volunteers who dedicate thousands of hours to serving their communities” (Municipalities of Newfoundland and Labrador, n.d.), it is recommended that the development of the municipal or public sector plan be developed by an independent third party. Without the proper development of goals and objectives, it is impossible to attain them. Third parties can assist in giving an objective view of how to identify and manage risks. The success of public sector planning depends on the critical success factors of risk identification, management as well as appropriate implementation of the processes needed to ensure effective control.

From the observed municipal plans throughout the content analysis, a select few had outsourced the development of their municipal plan to professionals. The outsourced municipal plans were significantly better than those developed by the municipalities themselves. They were up to date, they clearly identified objectives, barriers, and even at times they mentioned implementation strategy. There is recognition that there is a cost involved with this recommendation; however a properly developed municipal plan is vital to the success of municipalities and other public sector organizations in Newfoundland and Labrador.

At a micro-level, after extensive analysis, it was also apparent that a deficiency existed in flooding. Even though the federal and provincial governments has dedicated a great deal of resources to map flood risk zones within the province, a significant risk still exists. These designations simply, “discourage future flood vulnerable development” (Environment Canada, 2009). Although this program attempted to decrease escalating disaster assistance programs, it was observed that it has not minimized the risk of flooding in the designated communities. We recommend that the provincial government undertake a study to identify and classify the municipalities of Newfoundland and Labrador that are most at risk to flooding. Once a list is produced outlining these municipalities, controls and processes should be implemented to decrease the risk of flooding within these communities. These risks and controls should be at the centre of all future strategic planning.

It is also recommended that new studies be conducted within these municipalities due to the development of new technology in flood mapping and sea-level studies. It was brought to our attention while attending a conference that three dimensional flood mapping was currently being conducted in Nova Scotia and New Brunswick using new technology called LIDAR (Light Detection and Ranging). This system provides a much more accurate picture of shorelines, and provides elevation data. Scientists can then calculate the rising sea-level trends and map these on to the elevation data provided by LIDAR, for a much more accurate illustration of the apparent flood risk.

The final proposed recommendation specifically for the province is concerning the apparent economic risk visible in rural municipalities. When the cod moratorium was imposed in 1992, one of the main economic mainstays of the province vanished. Although the introduction of the tourism and oil and gas industry in Newfoundland and Labrador has absorbed some of the economic burden, it is no secret that the unemployment rate is the highest of the Canadian provinces. This can be observed specifically in rural Newfoundland and Labrador where municipalities which once flourished on the fishery industry are now economically challenged.

The authors recommend an ongoing study of the roles and responsibilities of municipalities affected by economic risks for their long-term sustainability. We realize that this is not a problem that can be quickly fixed, however it is a serious risk to the viability of the province, and requires attention.

Also, as indicated in the funding section future work should be considered in developing a comprehensive risk management methodology at a municipal government level. This methodology should reflect the situational and contextual issues that greatly influence the process of strategic planning at a public sector level in Canada. Specifically elements such as culture, communications and resources as well as other themes outlined in the findings section should be considered.

The analysis of strategic risk management within the municipal and public sector has identified some unanswered questions that may also prove to be areas for future research:

- Does a public sector organization have one overall risk culture or are there various subcultures? If there are sub-cultures, what influences these? Is it beneficial for an public sector organization to have more than one risk culture?
- How does a public sector organization measure its risk culture and the effectiveness of its processes? How can it measure changes in risk culture and processes?
- How can the public sector organizational function of communications influence risk perception, risk taking behaviour, risk propensity? Can communications be used to frame risks so that they result in either risk aversion or risk taking behaviour? If so, how can this be achieved?

Lastly, one of the key findings in this report was that insufficient attention is paid to the importance of organizational risk culture in strategic risk management processes as well as the literature. Both risk management practitioners and senior management are cautioned to give greater consideration to the overall impact that organizational risk culture has on the successful

practices and processes. Without an appropriate risk culture, all organizations – not just public sector - will not be well positioned to identify, manage and mitigate risks.

Finally, a by-product of this research we believe there is a need for a more comprehensive approach to studying risk management within the public sector within Canada. While universities in Europe and Australia have been doing extensive research in this area, we believe that a dedicated approach to examining risk management issues across all types of municipalities and public sector organizations would be an opportunity for Memorial University. This is an opportunity for placing Memorial University at the forefront of public risk sector management research in Canada. Although there are a number of research centers for financial risk management in Canada, there is none for public sector risk management. Given the nature of the risks that the Newfoundland public sector governments and managers will be facing over the next five to ten years, research in this area will have immense practical and academic relevance.

## References

- A Risk Management Standard. (2002). *AIRMIC, ALARM, IRM*. Retrieved May 30, 2008, from [http://www.airmic.com/en/Library/Risk\\_Management\\_Standards/](http://www.airmic.com/en/Library/Risk_Management_Standards/)
- Alvesson, M. (2002). *Understanding organizational culture*. London: Sage Publications.
- Alvesson, M., & Berg, P.O. (1993). *Corporate culture and organizational symbolism*. Berlin: Walter de Gruyter.
- Arnott, D. (2000). *Corporate cults: the insidious lure of the all-consuming organization*. New York: AMACOM.
- Asenova, D., Bailey, S., Hood, J., & Manochin, M. (2007, January). The UK's Prudential Borrowing Framework: A Retrograde Step in Managing Risk? *Journal of Risk Research*, 10 (1), 49-66.
- Ballou, B., & Heitger, D.L. (2005). A building-block approach for implementing COSO's enterprise risk management – integrated framework. *Management Accounting Quarterly*, 6(2). 1-10.
- Batterson, M., & Liverman, D. (2010). Past and future sea-level change in Newfoundland and Labrador: guidelines for policy and planning. *Newfoundland and Labrador Department of Natural Resources Geological Survey, Report*, 10-1, 129-141.
- Berstein, P.L. (1996). *Against the Gods: The Remarkable Story of Risk*. New York: Wiley and Sons.
- Best Practices in Risk Management: Private and Public Sectors Internationally. (1999, April). *KPMG study prepared for Treasury Board of Canada Secretariat*. 1-62.
- Bozeman, B. & Kingsley, G. (1998). Risk culture in public and private organizations. *Public Administration Review*, 58(2). 109-118.
- Bradbury, J.A. (1989). The Policy Implications of Differing Concepts of Risk. *Science Technology Human Values*, 14, 380.
- Bryman, A. and Bell, E. (2007). *Business Research Methods*. London: Oxford University Press.
- Cameron, J.W. (2003). Managing Risks Across The Public Sector. *Auditor General Victoria*. 1-106.
- Cameron, J.W. (2004, June). Managing Risk Across The Public Sector: Good Practice Guide. *Auditor General Victoria*. 1-8.
- Chapman, R. J. (2006). *Tools and Techniques for Enterprise Risk Management*. London: Wiley.
- Cho, J., & Lee, J. (2006). An integrated model of risk and risk-reducing strategies. *Journal of Business Research*, 59(1). 112-120.
- Conchie, S.M., & Burns, C. (2008). Trust and risk communication in high-risk organizations: A test of principles from social risk research. *Risk Analysis*, 28(1).

Cooper, T., & Hsiao, A. (2008). *What is strategic risk? Examining the notion of 'strategic risk' and 'strategic' risk*. ASB 2008 Conference Proceedings.

COSO. (September 2004). *Enterprise risk management – integrated framework: Executive Summary*.

Das, T.K., & Teng, B. (2001). Strategic risk behaviour and its temporalities: Between risk propensity and decision context. *Journal of Management Studies*, 38(4). 515-534.

Douglas, M. (1992). *Risk and blame : essays in cultural theory*. New York: Routledge.

Drew, S. A., Kelley, P.C., & Kendrick (2006). CLASS: Five elements of corporate governance to manage strategic risk. *Business Horizons*, 49, 127-138.

Drew, S.A.W., & Kendrick, T. (2005). Risk management: the five pillars of corporate governance. *Journal of General Management*, 31(2). 19-36.

Environment Canada. (2009). Floods-Newfoundland and Labrador. Retrieved online April 13, 2010, from <http://www.ec.gc.ca/eau-water/default.asp?lang=En&n=BA0EB6A1-1>

Fischhoff, B. (1995). Risk perception and communication unplugged: Twenty years of process. *Risk Analysis*, 15(2). 137-145.

Fischhoff, B. (2002). Risk perception, risk communications, risk taking. *The Journal of Psychology and Financial Markets*, 3(2). 102-111.

Fromm, J. (2006, April). Experts' Views on Societal Risk Attention1. *Journal of Risk Research*, 9 (3), 243-264.

Gaskell, G., Huber, M., & Rothstein, H. (2006, February). A Theory of Risk Colonization: The Spiralling Regulatory Logics of Societal and Institutional Risk. *Economy and Society*, 35 (1), 91-112.

Gates, S. (2006). Incorporating Strategic Risk into Enterprise Risk Management: A Survey of Current Corporate Practice. *Journal of Applied Corporate Finance*, 18(4), 81-90.

Government of Newfoundland and Labrador. (n.d.) Land Area. Retrieved online April 13, 2010, from <http://www.gov.nl.ca/aboutnl/area.htm>

Government of Newfoundland and Labrador. (n.d.). Flooding in Newfoundland. Retrieved online April 13, 2010, from <http://www.env.gov.nl.ca/env/Env/waterres/HydMod/Flooding.asp>

Grant, G. (2007). Strategic risk is the Main Threat to Shareholder Value but Too Many Firms Are Still Failing to Grasp this Nettle. *Financial Management*, September 2007, 1.

Guide To Risk Managing Risk in the Western Australia Public Sector. (1999). *The Government of Western Australia*, 1-34.

Hanssen, J. (2005). Corporate culture and operational risk management. *Bank Accounting & Finance*, 18(2). 35-38.

- Hansson, S. (2010). Risk: objective or subjective, facts or values. *Journal of Risk Research*, 13(2), 231-238.
- Higgins, J. (2008 A). Depopulation Impacts. Heritage Newfoundland.
- Higgins, J. (2008 B). Economic impacts of the cod moratorium. Heritage Newfoundland. *Highlights of a Forum Convened by the Comptroller General of the United States: GAO-08-627SP. GAO Reports*, 1-53.
- Hill, S. (n.d.). A Primer on Risk Management in the Public Service. *University of Calgary*, 1-17.
- HM Treasury (2004). *Management of Risk – Principles and Concepts*, (The Orange Book), Revised.
- Hood et al. (2007). The UK's Prudential Borrowing Framework: A Retrograde Step in Managing Risk? *Journal of Risk Research*, 10(1), 49-66.
- Hood, J. & Kelly, S. (1999). The Emergence of Public Sector Risk Management: The Case of Local Authorities in Scotland. *Policy Studies*, 20 (4), 273-284.
- Hood, J., & Young, P. (2005). Risk financing in UK local authorities: is there a case for risk pooling? *International Journal of Public Sector Management*, 18 (6), 563-578.
- Hopkins, M. and Nightingale, P. (2006). Strategic risk management using complementary assets: Organizational capabilities and the commercialization of human genetic testing in the UK. *Research Policy*, 35(3), 355-374.
- Hyde, R. C. (2007). In Crisis management, getting the message right is critical. *Public Relations Strategist*, 13(3). 32-35.
- Jenkins, W.O. Jr. (2007, February). Applying Risk Management Principles to Guide Federal Investments. *United States Government Accountability Office*, 1-41.
- Johnson, G., Scholes, K., Whittington, R. (2006). *Exploring Corporate Strategy*. London: FT-Prentice Hall.
- Jorgensen, H. (2006, March). Benchmarking puts shape to the landscape. *Risk Management*, 50 (3), 32-37.
- Ke, W., & Wei, K.K. (2007). Organizational culture and leadership in ERP implementation. *Decision Support Systems*, 45. 208-218.
- Keynes, J.M. (1937). The general theory of employment. *Quarterly Journal of Economics*, 51(2), 109-123.
- Kiev, A. (2002). *The Psychology of risk: Mastering market uncertainty*. New York: John Wiley & Sons.
- Knight, F. (1921). *Risk Uncertainty and Profit*. Boston, Ma: Houghton Mifflin.
- KPMG. (1999). Best Practices in Risk Management: Private and Public Sectors Internationally. *KPMG study prepared for Treasury Board of Canada Secretariat*. 1-62.
- Lam, J. (2003). *Enterprise risk management: From incentives to controls*. Hoboken: John Wiley & Sons.

- Management Accountability Framework. (2003). *Treasury Board of Canada Secretariat*.
- McBride, M., & Kaaley, G. (n.d.). The impact of privatization on Newfoundland college students: the case of the Career Academy. *York University-Centre for Research on Work and Society*.
- McCloskey, J. & Smith, D. (1998, October). Risk Communication and the Societal Amplification of Public Sector Risk. *Public Money & Management*, 18 (4), 41-51.
- McGee, M.W. (2005). Measuring the payoff of strategic risk management. *CMA Management*, November, 30-35.
- Municipalities of Newfoundland and Labrador. (nd). *Fact Sheet*.
- NAO (2000) *Supporting Innovation: Managing Risk in Government Departments*. London: National Audit Office.
- Newfoundland and Labrador Tourism. (2010). *Our place in the world*.
- Ngwenyama, O.K., & Sullivan, W.E. (2005, Spring). How are public sector organizations managing is outsourcing risks? An analysis of outsourcing guidelines from three jurisdictions. *Journal of Computer Information Systems*, 45 (3), 73-87.
- Noy, E., & Ellis, S. (2003). Corporate risk strategy: Does it vary across business activities? *European Management Journal*, 21(1), 119-128.
- Peccia, T. (2001). Designing an Operational Risk Framework from a Bottom-Up Perspective. *Mastering Risk Volume 2: Applications*, Pearson Education Ltd, UK.
- Prasad, P. (1993). Symbolic Processes in the Implementation of Technological Change: A Symbolic Interactionist Study of Work Computerization", *Academy of Management Journal*, 36(6), 1400-29.
- PricewaterhouseCoopers (2005). *Risk Perspectives*. London.
- Qiao, Y. (2007, Spring). Public Risk Management: Development and Financing. *Journal of Public Budgeting, Accounting & Financial Management*, 19 (1), 33-56.
- Renn, O. (1998, January). Three decades of risk research : accomplishments and new challenges. *Journal of Risk Research*, 1 (1), 49-71.
- Risk Management Toolkit. (2004, February). *ACTIA- Insurance & Risk Management Strategies*, 1-22.
- Gephart, R., Van Maanen, L. and Oberlechner, T. ( 2009). Organizations and Risk in Late Modernity. *Organization Studies*, 30, 141-155.
- Robillard, L. (2001). Integrated Risk Management Framework. *Treasury Board of Canada Secretariat*, 1-42.
- Rossiter, C. (2001). Risk culture – up close and personal. *CA magazine*, 134(3), 45-50.
- Rothstein, H. (2006, September). The institutional origins of risk: A new agenda for risk research. *Health, Risk and Society*, 8(3), 215-221.

Rowe, C.A. (2004, November). Managing Risk in the Public Sector. *Risk Management*, 51 (11), 52.

Schein, E.H. (1992). *Organizational culture and leadership*. San Francisco: Jossey-Bass.

Sitkin, S.B. & Pablo, A.L. (1992). Reconceptualizing the determinants of risk behaviour. *Academy of Management Review*, 17(1), 9-38.

Slywotzky, A. J. and Drzik, J. (2005). Countering the Biggest Risk of All. *Harvard Business Review*, April, 78-88.

Slywotzky, A.J. (2007). *The Upside*. New York: Random House.

Smith, D. and Toft, B. (1998, October). Editorial: Issues in the Public Sector Risk Management. *Public Money & Management*, 18 (4), 7-11.

Statistics Canada. (2010). *Labour Force Characteristics*.

*Urban and Rural Planning Act 2000*. Government of Newfoundland and Labrador.

Walker, D.M. (2005, June). Risk Management Principles Can Help DHS Allocate Resources to Highest Priorities. *United States Government Accountability Office*, 1-17.

Ward, S. C. and Chapman, C. (1995) Risk-management perspectives on the project lifecycle,

Wolfson, D., Hammond, B., & Lenzi, P. (September 2008). Risk Communication Strategies. *RIMS Canada Conference*. Conference Presentation. Retrieved October 8, 2008, from [http://chapters.rims.org/Sites/RIMS\\_Canada\\_Conference/2/Toronto2008/PresentationMaterials/Default.aspx](http://chapters.rims.org/Sites/RIMS_Canada_Conference/2/Toronto2008/PresentationMaterials/Default.aspx).

Zonis, M., & Wilkin, S. (2001). Driving Defensively Through a Minefield of Political Risk. *Financial Times Mastering Risk Volume 1: Concepts*, Pearson Education Ltd, UK.

## **Appendix A - Cooper and Hsiao 2008**

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## **WHAT IS STRATEGIC RISK? EXAMINING THE NOTION OF 'STRATEGIC RISK' AND 'STRATEGIC' RISK**

*What is strategic risk? Questions emerging from the literature include: is 'strategic' risk different than 'strategic risk'? How can strategic risk be defined? Is there a method of managing strategic risk? Proposing a conceptual model as a basis for analysis, this paper offers a number of approaches to answering these queries.*

### **What Is Strategic Risk?**

What is strategic risk? The practitioner literature outlined in this paper points to strategic risk management emphasizing the importance of strategy, decision making and implementation management in addressing risk within an organization. The academic literature has also been robust in the study of financial risk management. In reviewing the literature, there are a number of questions about risk that emerge within the area of strategic management. The literature manifests that strategic risk may be particularly high for organizations with significant long-term programs of innovation or where high levels of uncertainty exist about key issues in the environment. Moreover, there is also evidence that there has been a progressive move to incorporate formal risk assessment in regular business plans as well as the investment appraisal of major projects (Weick and Sutcliffe 2001; Lam 2003; Slywotzky 2007). Questions emerging from the literature include: is 'strategic' risk different than 'strategic risk'? How can strategic risk be defined? Is there a method of managing strategic risk? How has strategic risk been managed in industry? This paper proposes a number of approaches to answering these queries.

The first part of this paper explores the concept of strategic risk. In examining strategic risk it is important to conceptualize it within the broader field of risk management. The term strategic risk is used in a number of ways: as an element of risk such as financial or operational, as a way of managing risk, as a reference to sophisticated risk practices or the involvement of senior management in the risk management process. The paper proposes a synthesis of the different definitions in an attempt to gain an understanding for further research.

The second part of the paper develops a conceptual process model for examining strategic risk within organizations. Using tools and applications from both the strategy and risk fields, the model is proposed to guide further research.

### **Risk in the Management Literature**

Risk is an incredibly important concept in the management fields. The writings of Knight (1921) started the management literature but risk, as a subject, is extremely old. The modern conception of risk is rooted in the Hindu-Arabic numbering system which emerged over eight hundred years ago but the serious study of risk began in the Renaissance in 1654 with the work of Pascal (Berstein 1996). The

concept of risk within society has also been increasingly analyzed, the work of Beck (1992), Giddens (1990) and Lupton (1999) reflecting an increasing societal concern about risk and its management.

Risk was traditionally understood in terms of its role in ‘taming chance’ by quantifying and controlling uncertainty. The early management literature reflects this understanding of risk. Following the work of Knight (1921) and Keynes (1937) distinctions are made between risk – where probabilities are known – and uncertainty – where they are unknown (Berstein 1996; Hopkins and Nightingale 2006).

Within the management literature, most organizations have viewed the process of risk management primarily as an issue of compliance with statutory or regulatory requirements. Risk management within organizations has traditionally occurred within specific areas – technology, regulatory, financial, environmental etc. – with little or no coordination. Major ‘risk’ events such as September 11, Enron, WorldCom made it increasingly apparent that the processes, policies and procedures of managing organizational risk must be a cohesive, constant analysis of both the internal and external organizational environment (Perrow 1999; Grant 2007; McGee 2005). After the major ‘risk’ events of the last twenty years, the literature suggests a concentration on compliance with statutory regulatory requirements as the driver for risk management within an organization may be not an effective motivation for the management of risk.

The notion of risk as a fundamental part of strategic management has also become increasingly important in organizations. The rise of Enterprise Risk Management (ERM), sophisticated approaches to financial risk by both financial and non-financial organizations and an emphasis by regulators on risk related issues manifests this importance. However, ERM is a relatively recent management activity and has not been fully implemented in most organizations.

ERM implementation is a recent development and there has been little academic research about its success or the barriers to furthering its progress. In particular, very little has been published about attempts to identify and manage strategic risks while integrating them into a corporate-wide ERM framework (Gates 2006).

As more organizations are focusing on the systemic and controllable risks within their business as well as ERM, a question emerges as to how this fits in with an organization managing its strategic objectives? Moreover, how does the risk function manage ‘strategic risks’? Yet it is unclear from the literature what strategic risks are and how they are managed. In order to further the research, there needs to be a common understanding of strategic risk and what it means to be managed by organizations.

### **The Concept of Strategic Risk**

One of the reasons for the lack of academic research about strategic risk is the confusion as to what is ‘strategic risk’. According to Slywotzky and Drzik (2005) many of the early ERM adopters are at a preliminary assessment in which they treat enterprise risk management as an extension of their audit or regulatory compliance processes. Other organizations are at a more advanced stage, in which they quantify risks and link them to shareholder and risk-transfer decisions.

Even among more advanced practitioners the focus of enterprise risk management rarely includes more than financial, hazard, and operational risks. It is relatively rare to have an organization focusing on its strategic risks as part of its ERM practices. The result is that organizations may be focusing on the wrong risks, instead of the strategic risks that can be a much more serious cause of value destruction (Slywotzky and Drzik 2005).

It is important to note that financial risk has been the focus of much of the management literature and is the most developed when examining strategic risk. Financial risk is primarily quantitative with emphasis on the risk return relationship; the academic research manifesting this focus on quantitative analysis (Miller and Bromiley 1990).

Also there has been a plethora of research on the managerial perspectives on risk and risk taking (March and Shapira 1987) particularly within financial risk management. Significant work has also been done at the organizational level where most of the management literature has emerged from Bowman's (1980) work on the notion of risk/return (Maurer 2004).

Specifically the academic research on the concept of strategic risk has focused on the issue of Bowman's Paradox which stated there is a negative relationship between risk and return in most industry sectors. This is contrary to conventional thinking which has that higher risks are positively correlated with higher returns in the aggregate (Damodaran 2007).

Bowman argued that an organization's attitudes towards risk may influence its risk tasking. Firms who do not perform as well in the aggregate often take greater and less justifiable risks (Bowman 1982). This finding pointed to the need for a comprehensive strategy and understanding of the individual organizational factors in the development of an approach to risk. However, the result of Bowman's and others work has been to place an emphasis of strategic risk within a financial context which has focused and shaped the management literature. The focus has been on quantitative research on financial risk management issues which may have a strategic impact upon the organization. There has been little consideration of the non-financial strategic risks facing an organization. Some of these non-financial risks may be considered 'soft' or un-quantifiable, such as reputation, which means that a qualitative approach may be the most appropriate method for further research.

### **'Strategic' Risk or 'Strategic Risk' Management?**

Risk management is much wider than simple financial or operational risk. Concepts such as 'strategic risk management', 'integrated risk management' and 'enterprise risk management (Kleffner et al. 2003; Liebenberg and Hoyt 2003; Meulbroek 2002) now describe the wider application of such thinking, tools and techniques (Kendrick 2004).

There is a common view that strategic risk is about managing risk 'strategically' rather than examining strategic risk as a category similar to operational, financial and other risk areas (cf. Aron et al. 2005; Zolkos 2002; Lenckus 2006; Jones et al. 2006; Miller and Bromiley 1990). This common view causes confusion and may be one of the reasons that strategic risk is not further researched within the management literature.

As outlined previously, one of the reasons for a lack of research is that there is no commonly accepted standard definition of strategic risk. Much of this is no doubt due to the complexity of the concept of strategic risk, which suggests that no single quantitative measure will prove satisfactory in all strategic situations. Those risks that can be precisely quantified receive most of the attention from academic researchers, as well as corporate risk managers, while 'soft risks', however significant, often receive little notice (Gates 2006; PricewaterhouseCoopers 2005). In order to further the literature, the need for a common understanding on strategic risk needs to be developed.

Slywotzky and Drzik 2005 attempt to find this common understanding, defining strategic risk as "an array of external events and trends that can devastate a company's growth trajectory and shareholder value" (p. 80). They further categorize *strategic risk* into seven major classes: industry, technology, brand, competitor, customer, project, and stagnation. It is important to note that this definition and categorization

of strategic risk focuses principally on the *external* environment. Managers, however, in focusing on the external environment, may miss internal risks to the organization that have as much importance strategically as external ones.

Another definition of strategic risk is explained in terms of the Basel II regulation in the financial services sector (Allen 2007). Within this regulation, strategic risk is identified as a potentially significant risk in Pillar II of the Basel II framework, but no definition is provided. In its Pillar II guidelines, the Committee of European Banking Supervisors (CEBS) suggests the following: strategic risk is “the current or prospective risk to earnings and capital arising from changes in the business environment and from adverse business decisions, improper implementation of decisions or lack of responsiveness to changes in the business environment” (Allen 2007). The distinction in terms of the regulatory guidance is that strategic risk needs to be both externally and internally identified, managed and controlled. ‘Implementation’ and ‘lack of responsiveness’ manifest the need for internal control and focus in managing strategic risk.

### **Strategic Risk as an Element of Operational Risk**

Although the Basel II guidance is regulatory driven, this definition of strategic risk provides little assistance on how strategic risk might be identified and analyzed. There is also considerable potential overlap with the standard Basel II definition of operational risk, which is: "the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events" (Allen 2007).

The Basel II guidelines are not alone in identifying strategic risk within an operational sphere. Chapman (2006 p. 225) further defines strategic risk from an operational perspective as:

*Adopting the wrong business strategy, failing to execute a well-thought out strategy or not modifying a successful strategy over time to reflect changes in the business environment are forms of operational risk. Strategic risk, then, may be defined as the risk associated with initial strategy selection, execution, or modification over time, resulting in a lack of achievement of overall objectives*

Viewing strategic risk as an operational risk may seem trivial, but it is vital in terms of implementation and the resources dedicated to it. Also, viewing strategic risk as operational confuses the situation for further research by not clearly distinguishing between the inherent external risks the organization faces and the potential inadequacies in the internal governance and management processes in place (Allen 2007). While the Chapman definition more fully encompasses both the internal and external issues surrounding strategic risk, its focus on placing strategic risk within an operational environment may lead to confusion.

An alternative definition may be seen as that proposed by (Johnson et al. 2006 p. 369) where “strategic risk can be seen as the probability and consequences of a failure of strategy”. The interesting element of this definition is that it focuses on the ‘strategic’ element of the definition rather than solely the ‘risk’ element. This is important in that strategic risk is not just about the management of risk but also that of strategy as outlined by Chapman (2006). For example, the likely return from a particular strategy may be seen as an important part of the acceptability of that strategy. Investigating the risk of pursuing a particular strategy should therefore be another method of examining the acceptability.

From examining the literature, what is needed is an understanding and acceptance in the management literature of what is strategic risk as well as a focus on managing risks strategically. It is clear that there is too much overlap between operational and strategic risk. Organizations need to separate the operational and strategic risks or there may be a failure of appropriate identification, management and control.

As a starting point, the Johnson et al. definition may make the most sense and provide a reference for further research. Examining strategic risk as a failure of strategy results in strategic risk **management** being about how to lessen or eliminate this failure.

### **An Integrative Approach Strategic Risk Management – Building a Conceptual Model**

There is also very little on how to approach strategic risk management in the literature. Slywotzky and Drzik (2005) develop a six step approach to manage strategic risk. Their approach, like their definition, is very much focused on the external business environment. This reduces the viability of examining internal strategic risks. An alternative model more focused on the use of strategic tools and risk issues may be of benefit. Essentially a synthesis of the internal and external approach to strategic risk management may be of use for guiding further research and explaining the concept of strategic risk.

We believe a three phase approach can be utilized to explain strategic risk management. The three phases are outlined as follows:

#### **Strategic Risk Process – A Conceptual Model**

<b>Phase</b>	<b>Mechanisms/Tools</b>	<b>Outputs</b>
<b>Phase 1 – Situation and Contextual Analysis</b>	<ul style="list-style-type: none"> <li>• SWOT analysis</li> <li>• PESTEL analysis</li> <li>• Value chain analysis</li> <li>• Existing process evaluation</li> <li>• Resources (internal/external)</li> <li>• Change management issues/opportunities</li> <li>• Risk taxonomy application</li> </ul>	<ul style="list-style-type: none"> <li>• Clarifying the organization's strategic risk and business objectives</li> </ul>
<b>Phase 2 – Strategic Risk Analysis and Evaluation</b>	<ul style="list-style-type: none"> <li>• Risk taxonomy</li> <li>• Existing controls</li> <li>• Time issues</li> <li>• Probability</li> <li>• Severity</li> <li>• Volatility</li> <li>• Gap analysis</li> <li>• Evaluation of existing controls</li> </ul>	<ul style="list-style-type: none"> <li>• A list of identified strategic risks and issues pertaining to the case</li> <li>• Statement of major strategic risks</li> <li>• Statement of strategic residual risks</li> <li>• Statement of existing controls to address strategic residual risks</li> </ul>
<b>Phase 3 – Strategic Risk Alternatives and Recommendations</b>	<ul style="list-style-type: none"> <li>• Risk Appetite</li> <li>• Risk Reduction</li> <li>• Risk Removal</li> <li>• Risk Transfer or Reassign</li> <li>• Risk Retention</li> </ul>	<ul style="list-style-type: none"> <li>• Outline of target risks</li> <li>• A series of alternatives as to how to achieve and manage the target strategic risks</li> </ul>

Phase	Mechanisms/Tools	Outputs
	<ul style="list-style-type: none"> <li>• Monitoring and controlling</li> </ul>	<ul style="list-style-type: none"> <li>• A series of recommendations to achieve, manage, control and monitor the strategic risks</li> </ul>

The model is only briefly outlined here. However, the approach utilizes concepts from strategic management such as PESTEL and SWOT analysis combined with risk management theory (i.e. risk taxonomies and the application of probability, severity and volatility). In this way, we believe this conceptual three step process approach provides a more robust approach to strategic risk management through the utilization of both strategic and risk management tools.

Taking both a strategic and risk management approach to examining strategic risk would seem to encompass the different definitions of strategic risk while giving a clear process to address issues in the area. Paramount to management literature is its emphasis on both the strategy behind ‘strategic risk’ as well as the identification of external risks in relation to internal governance and management processes. We have illustrated the approach below, using a process-based model, as an example of how strategic risk analysis can be used.

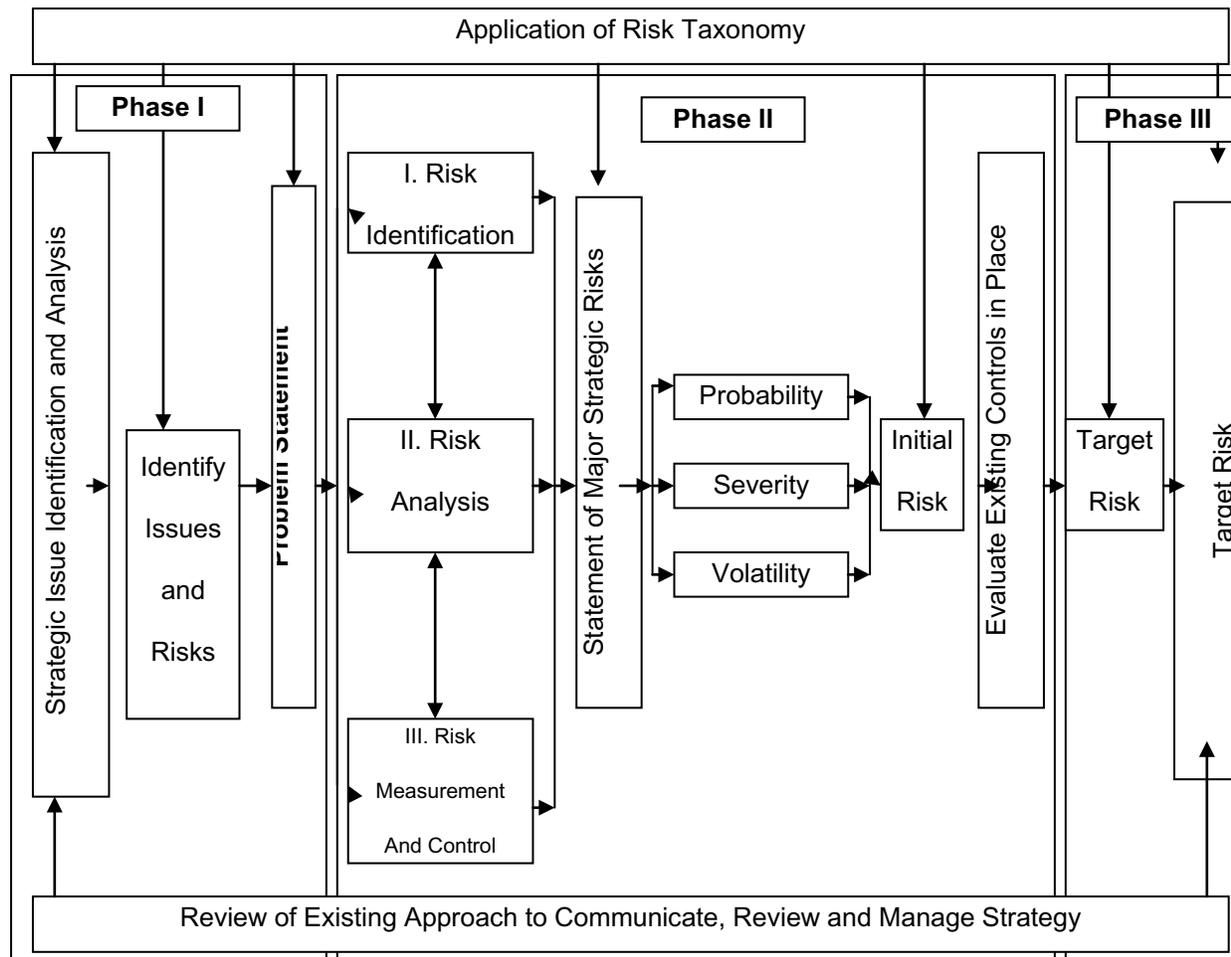
### **Explaining the Conceptual Model**

The model has been built a process management approach that is used extensively in the computer science and information systems literature. This process management approach emphasizes the importance of the situational and contextual variables influencing the analysis and instead of being prescriptive in its approach, focuses on a number of phases and steps that may be taken to examine strategic risk.

The conceptual model’s development has been done with three main stakeholders in mind: students who are examining strategic risk in functional business areas (such as operations, strategy and marketing), researchers who are examining strategic risk either from an academic or practitioner perspective as well as practitioners who are grappling with the concept of strategic risk in both their management frameworks and existing processes to strategy development. Although still at a conceptual level, it has been drafted with the input of risk management experts, practitioners and has been used in graduate level courses to examine strategic risk. The process model is outlined below.

The conceptual model has three phases.

### Proposed Methodology for Examining Strategic Risk



Phase 1 – **Situation and Contextual Analysis** – this first phase outlines whether the strategic risk facing the organization is primarily internal and/or external. The phase, using tools from the strategic and risk management fields, develops the context in which the strategic risk may be viewed. This phase outlines what are the strategic risks being and whether they should they be viewed instead as an operational or financial risk.

There are a number of existing management tools and processes that may assist users of the conceptual model. These include the ubiquitous SWOT (Strengths/Weaknesses/Opportunities/Threats) analysis. Although the manner in which the SWOT model is used has been questioned as an education tool in business (Skipton and Gupta 2006), its prevalence in management approaches to strategy cannot be questioned. SWOT analysis can be used as a method of identifying both the internal and external strategic risks. SWOT analysis can also assist in the examination of both internal (i.e. strengths and weaknesses) as well as external (i.e. opportunities and threats) situational and contextual issues facing the organization. Moreover, the identification, management and control of opportunities and threats is an essential element of any risk analysis as there are both upside (i.e. opportunities) and downside (i.e. threats) to strategic risks.

Other tools that may be utilized include PESTEL and Value Chain analysis. The PESTEL (Political, Economic, Social, Technical, Environmental, Legal) is primarily a management tool for identifying the risks facing the organization in the external environment. On the other hand, a Value Chain Analysis can assist in identifying internal risks that an organization may face throughout its value chain such as supplier, political and outsourced risks.

It is important to note that the tools that can be utilized in the conceptual model are not prescriptive. Instead, it is up to the user of the model to utilize the tools which can ultimately assist in the analysis.

Other aspects of examining the situational and contextual issues that may influence strategic risk are an understanding and evaluation of the current processes towards strategy and risk. Through investigating existing processes as well as identifying the internal and external resources that may influence the approach to strategic risk, there can be a better clarification of the situational and contextual issues that affect strategic risk in the organization. Specifically, in the development of the model, change was identified as an issue that acted as driver in the identification of issues that influence strategic risks.

Change creates a number of strategic risks and as outlined in Lam (2005) and Flyvbjerg et al. (2003) major projects now track change management issues as a risk the overall projects' strategy throughout the project's lifecycle. Although change underpins communication and processes throughout the three phases of the model, the development of the conceptual model has showed that change management issues need to be identified at the beginning of the process of examining strategic risk.

Also, in the development of the model, two areas were identified which would have an impact on all three phases. The first was in the review of existing approaches to communicate, review and manage strategy. Since the conceptual model is about strategic risk, it was recognized that an organization's approach to strategy needs to be considered throughout the methodology. Two specific issues were identified. First, how an organization conveys its approach to strategy – for example whether it is communicated only at internal but not external stakeholders and the issue(s) that ensue from taking this approach may create a strategic risk.

Secondly, the approach to reviewing strategy may also creates risks such as whether the organization's strategy is reviewed on a regular basis, role of specific stakeholders as well as the impact of this review on how strategy is managed. If strategy is not continually evolving within organizations then this poses strategic risks to its management. The model assumes that the process behind communication, review and management of strategy is a consistent strategic risk within an organization and should be considered in all three phases of the model.

Also, the use of risk taxonomies such as Chapman's (2006) approach, can assist in maintaining a common understanding of risk through a standardized approach to categorization and areas of risk facing an organization. The use of a taxonomy creates a common language for examining strategic risk. Also with the plethora of strategic risks facing an organization, a taxonomy may be utilized to develop a common approach to risk identification. In the initial development of the model, risk identification was seen as invaluable in initiating the analysis of strategic risk facing the organization.

Phase 1, from a methodological standpoint, ends with a problem statement. Although a problem statement is ultimately prescriptive, it may be better articulated as the clarification of the organization's strategic risk and business objectives. This clarification is necessary as there may a number of issues and/or risks facing the organization. Through a statement clarifying the strategic risk(s) facing the organization, there can also be a focus on the specific strategic risks which may have the greatest impact

on the situation being examined. The problem statement also allows there to be focus in moving to Phase 2 and 3 in the conceptual model.

In Phase 2, **Strategic Risk Analysis and Evaluation**, the methodology utilizes analytical processes from the strategic and risk management literature. The first three steps of risk identification, analysis as well as measurement and control are essential process driven approaches to managing risk.

In risk identification, the specific risks identified in Phase 1 are formally articulated and grouped by the risk taxonomy. There is then the process of analysis. Questions to be asked in this analysis include: is the risk identified strategic or operational, why is the strategic risk important to the situation or organization being studied and does the strategic risk being reflect wider organizational issues such as the existing approach to communicate, review and manage strategy within the organization.

The third step in Phase 2, measurement and control, acknowledges that some risks, although strategic are already measured and controlled by the organization. Strategic risks facing the organization are therefore easier to examine given the already existing measures and control. Strategic risks that are not already controlled or measured on an ongoing basis can be given priority in the analysis as well as the organization's approach to strategic risk management.

The first three steps in the strategic risk analysis and evaluation result in a statement of major strategic risks. This may be seen as a further refinement of the problem statement outlined in Phase 1. The reason for articulating a statement of major strategic risks is to ensure that there is subsequent analysis surrounding probability, severity and volatility focused on strategic risks.

Probability, severity and volatility are key concepts in risk management and are prevalent throughout most of the practitioner and management literature. While not relevant in every strategic risk being examined, they do provide consistent variables that can be evaluated and qualified. Other issues that may influence probability, severity and volatility also include temporal variables as well as existing controls. Both time and existing controls are important in that they can lessen the degree of probability or increase volatility depending on the type of strategic risk. Other tools that can be utilised in this Phase include scenario analysis which can assist in the review of severity as well as gap analysis which can increase probability.

The methodology then outlines a statement of initial risks based on this review of probability, severity and volatility. The reason for the statement of initial risk is that the analysis based around probability, severity and volatility assumes that there are no existing controls around strategic risk in place. These can be classified as strategic residual risks – i.e. strategic risks that have no controls in place or alternatively there are no identified controls. Through evaluating existing controls in place, there can be identification of what controls should be put in place which is the focus of Phase 3. This results in a statement of existing controls to address strategic residual risks.

The result of Phase 2 is a number of outcomes but focuses on a statement of major strategic risks, controls in place and any residual risks identified.

Phase 3 - **Strategic Risk Alternatives and Recommendations** – the final phase focuses on how an organization might approach the development of alternatives and recommendations around strategic risk. Concepts such as risk appetite and risk transfer are utilized so that there is a clear understanding of how the strategic risks affect the overall approach to strategy.

In Phase 2, there was a Statement of Major Risks. In Phase 3, there is now an outline of the target strategic risks. The role of this outline is to articulate the target strategic risks that were evaluated in the

analysis of probability, severity and volatility. Through an articulation of the risk appetite, the organization can determine how much of the strategic risk the organization is willing to assume.

Depending on the risk appetite of the organization, there then can be a process of risk reduction, removal or reassignment dependent upon the risk management processes and controls identified in Phase 1 and 2. Ultimately this phase of the methodology aims to produce a series of alternatives as to how to achieve and manage the target strategic risks. After completing a review of the alternatives, and considering issues such as risk transfer or retention, recommendations as to how to achieve, manage, control and monitor the strategic risks can be developed.

The model, at this point, is still conceptual and needs to be developed empirically. One of the issues that will need to be addressed in its empirical development is the very nature of strategic risk which may be seen as difficult to quantify. Further research is therefore needed to develop the model and the use of case studies may be the most appropriate research methodology to pursue. Two illustrative case studies are outlined below to demonstrate the benefits of examining strategic risk and the final section of the paper outlines future research opportunities.

## Appendix B - Interview Questions

## **Interview Questions – Strategic Risk**

### **Governance**

#### **Major Outcome – How does the organization govern risk?**

Where does the risk management department sit within the organization? (i.e. Finance and Administration, Legal, etc)

What kind of resources does the risk management function have?

Are their specific risks (such as financial or operations) they are not responsible for?

Does risk management have access to the Board? Do they report directly into the board?

What is the title of the senior risk person within the organization?

### **Risk Identification**

#### **Major Outcome - How does the organization clarify its strategic risk and business objectives?**

How do they identify risks?

Do they identify risks by function/product/process? (or it is a combination?)

Does the organization use a specific list of risks or system of classification? (such as a taxonomy)

Do they use environmental scanning tools (such as PESTEL, Value Chain, SWOT, etc) to identify risks?

How does the identification of risks influence strategy development?

Does the risk management function review or have access to the organization's strategy?

How does the review of strategy affect the identification of risks?

### **Reporting**

*Major outcome – How does the organization report on risk?*

How does the organization report on risks?

Who do they report to?

How frequent do they report?

What is the form of the reporting? (i.e. verbally)

## Appendix C - Flood Risk Areas

### Designated areas as subject to recurrent and severe flooding

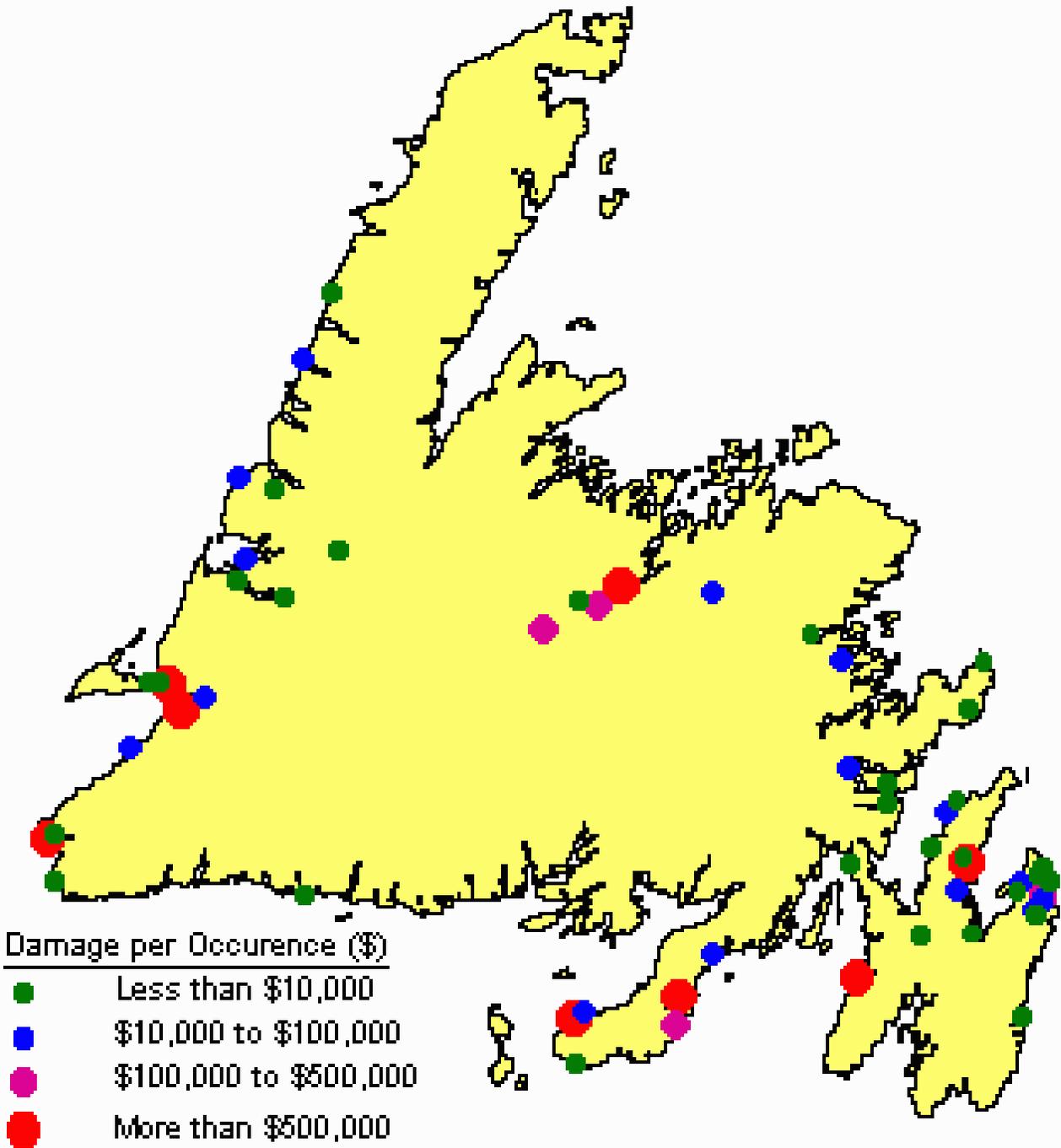
<i>Community</i>	<i>Designation</i>	<i>Remarks</i>
<b>Appleton*</b>	Glenwood/Appleton-Gander River	Designated 1990-05-16
Badger	Badger	Designated 1986-03-13
Bishop's Falls	Bishop's Falls	Designated 1990-11-15
Black Duck Siding	Stephenville Crossing/Black Duck Siding	Designated 1989-05-29
Coal Brook	Codroy Valley	Designated 1990-05-16
Cox's Cove	Cox's Cove	Designated 1990-04-12
<b>Deer Lake*</b>	Deer Lake	Designated 1988-03-15
<b>Glenwood*</b>	Glenwood/Appleton-Gander River	Designated 1990-05-16
<b>Glovertown*</b>	Glovertown-Terra Nova	Designated 1990-05-16
Mount Pearl	Waterford River Basin	Designated 1989-05-29
Nicholsville	Deer Lake	Designated 1988-03-15
Parson's Pond	Parson's Pond	Designated 1989-05-29
<b>Pasadena*</b>	Deer Lake	Designated 1988-03-15
<b>Placentia*</b>	Placentia	Designated 1986-03-11
Rushoon	Rushoon	Designated 1987-02-27
Rushy Pond	Rushy Pond	Designated 1986-03-13
South Branch	Codroy Valley	Designated 1990-05-16
South Brook	Deer Lake	Designated 1988-03-15
St. John's	Waterford River Basin	Designated 1989-05-29
Steady Brook	Steady Brook	Designated 1985-03-22
<b>Stephenville*</b>	Stephenville	Designated 1984-06-28
<b>Stephenville Crossing*</b>	Stephenville Crossing/ Black Duck Siding	Designated 1989-05-29
Trout River	Trout River	Designated 1990-11-15
Upper Ferry	Codroy Valley	Designated 1990-05-16

(Environment Canada, 2009, Floods-Newfoundland and Labrador)

\*The municipalities in bold with an asterisk beside it recognized and identified flood risk as an apparent risk in their municipal plan.

## **Appendix D – Economic Impact of Flood Risk Damage**

## Economic Impacts of Flood Damage



(Government of Newfoundland and Labrador, n.d.)

## **Appendix E – Building a Risk Management Culture**

## Appendix C

Building upon the COSO Enterprise Risk Management – Integrated Framework, Ballou and Heitger (2005) present the following approach to help organizations build an ERM culture.

### INTERNAL ENVIRONMENT

#### *Develop a Risk Management Philosophy*

- Take steps to understand the risk appetites of key stakeholder groups of the organization.
- Take steps to align the risk appetites of all stakeholder groups.

#### *Create a Risk Management Culture*

- Emphasize integrity and ethical values in every endeavor.
- Emphasize the role of employee commitment and capability by giving them incentives and measures.
- Design human resources policies and practices to support a risk culture.

#### *Design a Risk Management Organizational Structure*

- Establish responsibility for all board members and senior executives.
- Consider organizing a risk committee beyond the audit committee.
- Assign authority and responsibility for risk management to an executive such as a “chief risk officer.”

### OBJECTIVE SETTING

#### *Establish Clear, Strategic Objectives and Strategies*

- At entity-wide level.
- At other levels of the organization to the extent that a direct, material impact on the entity is reasonably likely.

#### *Determine Entity-Wide Risk Appetite*

- Align the risk appetites of key stakeholders with those of the company’s strategic objectives and strategies and its alliance partners.

### EVENT IDENTIFICATION

#### *Identify Risk Events*

- Consider factors influencing objectives and strategies.
- Analyze each risk category (i.e., strategic, operational, reporting, and compliance) carefully.

*Consider Event Interdependencies* (i.e., isolated, part of a chain reaction, those that cause ripple effects)

*Identify Measurement Issues Associated with Methodologies or Techniques Utilized*

### RISK ASSESSMENT

*Select Assessment Technique* (e.g., point estimates, probability/loss ranges, best/worst-case scenarios)

*Assess Inherent Probability/Frequency of Risk Events*

*Assess Cost Impact of Risk Events* (any losses per unit of output multiplied by output until contained)

*Consider Plotting Risks on a Graph*

### RISK RESPONSE

*Identify and Select Response for Each Risk* (accept risk, avoid risk, share risk, or reduce risk)

*Consider Effects of Risk Response on Other Risks*

*Adjust Risks Graphically Plotted During Risk Assessment*

- Accepted risks (estimated risk cost is plotted).
- Avoided risks (remove plots from graph).
- Shared and reduced risks (alter plots based on control activities).

### CONTROL ACTIVITIES

#### *Shared Risks*

- Assess costs of premiums for insured risks.
- Assess forfeited returns and/or costs to manage alliances.

#### *Reduced Risks*

- Identify control activities needed to reduce risk.
- Assess all costs associated with control activities.

#### *Adjust Graphic Plots of Risks*

- Determine the extent to which a shared risk activity, such as insurance, an alliance, or a control activity, reduces inherent probability/frequency estimates (preventative) and/or cost impact estimates (detective).
- Estimate total risk costs, which are the sum of residual risk costs and premium/alliance/control activity costs.

### INFORMATION AND COMMUNICATION

*Ensure that Information Systems Can Measure and Report Risk*

- Actual risk event occurrences (including those associated with avoided activities).
- Actual costs of shared risk activities such as insurance premiums and control activities.

- Actual costs of risk events.

*Communicate ERM Effectiveness and Costs*

- Ensure proper periodic reporting of ERM within the organization, particularly among people responsible for managing and overseeing ERM.
- Chief risk officer or other responsible executive should measure and document ERM effectiveness and costs.
- Responsible party reports on ERM effectiveness and costs to executives and board of directors.

**MONITORING**

*Perform Separate Risk Evaluations*

- Compare actual event occurrences with residual probability/frequency estimates.
- Compare actual costs with risk sharing/reduction and residual cost impact estimates.

*Re-evaluate Risk Assessments*

- Incorporate any changes to risk appetite, objectives, strategies, etc.
- Identify any events not previously identified.
- Add/revise estimates for probability/frequency, share/reduce cost, and/or cost impact estimates.

*Consider Areas to Expand ERM Framework Based on COSO's Integrated Risk Management—Integrated Framework*

(Ballou & Heitger, 2005, p. 6)



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