



City of Edmonton
Office of the City Auditor

**Emergency Management
Governance and Risk
Assessment Audit**

June 4, 2019



1200, Scotia Place, Tower 1
10060 Jasper Avenue
Edmonton, AB T5J 3R8
Phone: 780-496-8300
edmonton.ca/auditor

Report Highlights

Executive Summary	2
Recommendations	3
Background	4
Strategic Plan and Program Goals	6
Governance Documents	9
Roles and Responsibilities	11
Effectiveness of Organizational Structure	16
Hazard Identification and Risk Assessment	17
Appendix 1 – Audit Risk Assessment and Methodology	22
Appendix 2 – Cities Responding to Questions	24

Objectives

To determine if the City has **effective governance structures** in place for its emergency management program.

To determine if the City has an **effective process to prepare, review and communicate a disaster/hazard identification and risk assessment** to identify emergency management priorities for mitigation and preparedness activities.

Collaboration

We conducted our review of the City's **Hazard Identification and Risk Assessment** alongside independent, but complementary, audits being completed by the Office of the Auditor General of Alberta and the City of Calgary's City Auditor's Office. The intent of this coordinated audit initiative was to support broader insight and assurance on the state of emergency preparedness in Alberta.

If process or system opportunities are identified, the Office of the City Auditor may contribute to a collaborative summary report.

Scope

In scope

The City of Edmonton's Emergency Management Program **governance** and **disaster/hazard identification and risk assessment**. These structures and processes provide the direction a program requires to allow it to achieve its goals. This audit took place between September 2018 - February 2019.

Out of scope

1. Actual operations of the Office of Emergency Management (e.g., Emergency Support Response Team, Emergency Operations Centre, training programs, actual responses to emergencies or disasters, etc.)
2. Corporate Business Continuity Planning



Executive Summary

What did we do?

We reviewed the governance structures in place for the City's Emergency Management Program and its process to prepare, review and communicate its disaster/hazard identification and risk assessment.

What did we find?



The City does not have a formal documented and communicated strategic plan in place to direct the Emergency Management Program. This includes a mission, goals, objectives, performance measure and targets.



The City does not have a process for reviewing and updating the City's Emergency Management Program governance documents (Bylaw and Municipal Emergency Plan). The City's Municipal Emergency Plan is from 2004 and has not been updated since its creation. The Emergency Management Bylaw was last updated (consolidated) in 2012.



Emergency Management Program governance roles, responsibilities, and relationships are not clearly defined, communicated, coordinated, or performed.



The City currently does not have a formal process for preparing, reviewing, and communicating its Hazard Identification and Risk Assessment (HIRA).



Recommendations

Recommendation 1
Strategic Plan and
Performance Management
Framework

Develop a strategic plan and performance management framework for the City's Emergency Management Program that is approved by the Emergency Management Advisory Committee.

Recommendation 2
Governing Documents

Review, update, and adhere to the Emergency Management Program governing documents. This should include:

- Clearly defining and communicating roles, responsibilities, relationships, and authorities.
- A method and schedule for the evaluation, maintenance, and revision of the document.

Recommendation 3
Hazard Identification and Risk
Assessment

Develop and implement a process to create and update a Hazard Identification and Risk Assessment based on best practices.



Background

What is an Emergency Management Program?

An emergency management program is the system that provides for the management and coordination of prevention, mitigation, preparedness, response, and recovery activities for all hazards (potential threats to the health or life of individuals, to property and/or to the ability of individuals to maintain their livelihoods and regular daily activities). It should encompass all internal and external organizations, agencies, departments, and individuals having responsibilities for these activities.

There are many aspects of emergency management. Based on our audit risk assessment, this audit focuses on 1) the governance and 2) the hazard risk identification and assessment aspects of the City's Emergency Management Program.

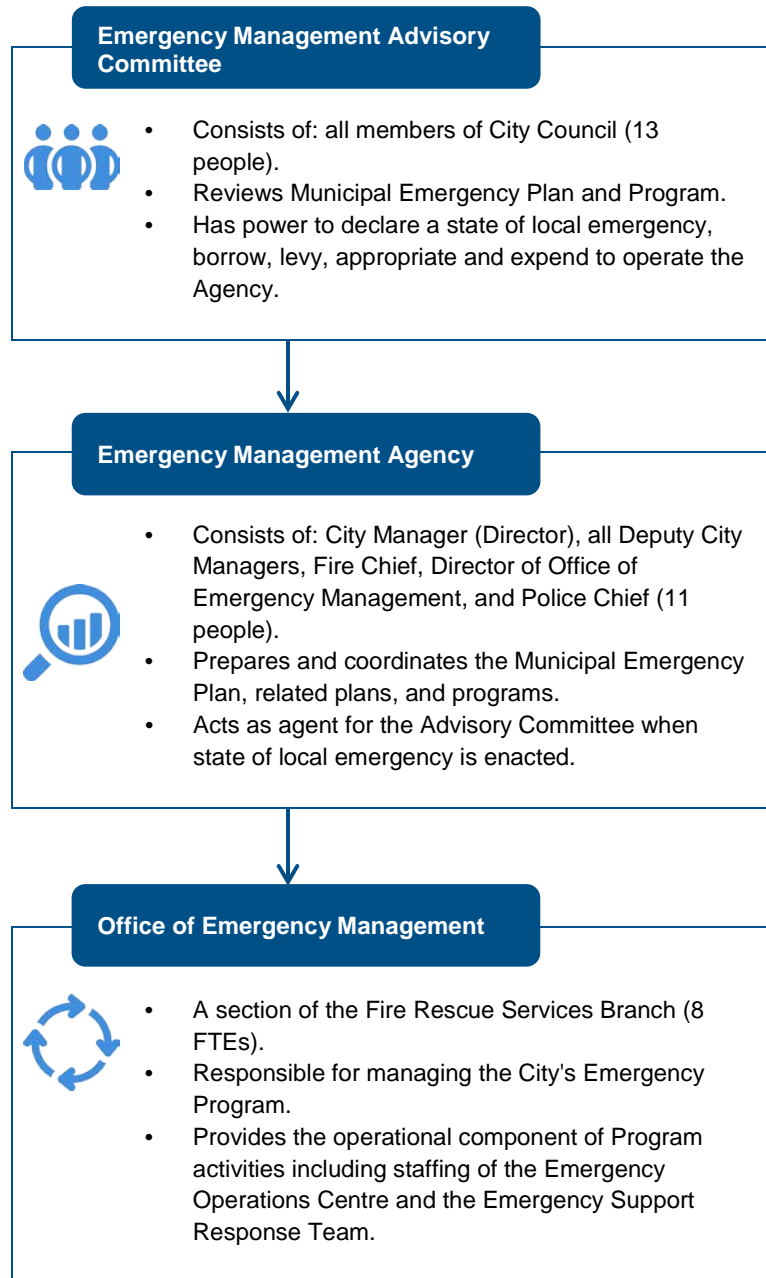
Emergency Management Governance Documents

The City of Edmonton's Emergency Management Program is governed by three key documents.

<p><i>Alberta Emergency Management Act</i></p>	<p>Authorizes the Alberta Emergency Management Agency (AEMA) to lead the coordination, collaboration and co-operation of all organizations involved in the prevention, preparedness and response to disasters and emergencies.</p>
<p></p>	<p>Prescribes the establishment of an Emergency Advisory Committee and Agency at the local government level.</p>
<p><i>City of Edmonton Bylaw 14737 – Emergency Management</i></p>	<p>Establishes the Emergency Management Advisory Committee and the Emergency Management Agency.</p> <p>Provides for the direction and control of the City's emergency operations under the Emergency Management Act.</p>
<p><i>City of Edmonton Policy C508 – Municipal Emergency Plan</i></p>	<p>Guide to prepare for and respond to major emergency and disasters affecting the City.</p>

Emergency Management Program Structure

There are three key stakeholder groups in the Emergency Management Program.





Strategic Plan and Program Goals

Summary of Findings

The City does not have a formal documented and communicated strategic plan in place to direct the Emergency Management Program. This includes a mission, goals, objectives, performance measures and targets.

What does the City have in place?

We sent questions about the City's Emergency Management Program to the 13 Emergency Management Advisory Committee members and the 11 Emergency Management Agency members. We received responses from 9 Advisory Committee members and 7 Agency members.



6 out of the 7 Agency members who responded to our questions feel there are formal Emergency Management Program goals and that they are monitoring whether or not they are achieved.



8 out of the 9 Advisory Committee members who responded to our questions said they do not feel they receive enough information to allow them to understand the City's progress towards achieving the goals. As well, 2 said they had not received an update on the Emergency Management Program goals and 4 were unsure if they had received an update.

Agency members indicated the goals of the Emergency Management Program are: 1) to minimize loss of life, reduce suffering, restore critical infrastructure and government, and protect property and the environment or 2) to ensure the City is prepared for and able to respond to major emergencies and disasters impacting the City. Five of the Agency members who responded are monitoring these goals through the regular meetings of the Agency.

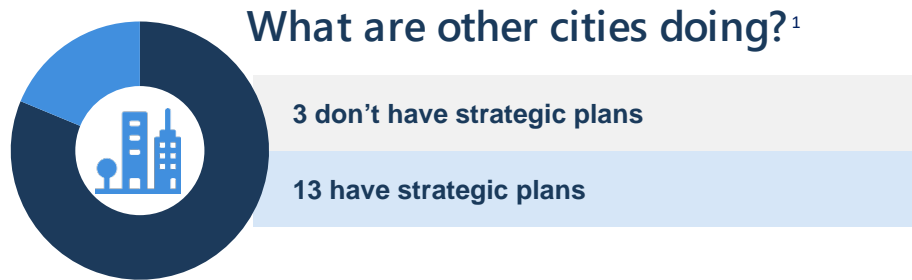
These goals are the generic, overarching outcomes of any Emergency Management Program. Our review of Agency meeting minutes and formal documentation did not find any reference to specific goals for the Emergency Management Program.

There were no meeting minutes from the Advisory Committee for us to review.

A standalone strategic plan for the Emergency Management Program does not currently exist. The only formal Emergency Management Program strategic plans are part of the Fire Rescue Master Plan. However, these goals and strategies do not form a complete strategic plan for the City's Emergency Management Program. For example, the corporate Business Continuity Program work currently underway is not mentioned in this strategy.

What should they have in place?

Best practice standards for emergency management programs include the establishment of a strategic plan, program goals, objectives, performance measures and targets.



Why is it important?

Without a formal strategic plan - including an agreed upon mission, goals, objectives, performance measures, and targets - for the Emergency Management Program, the Agency cannot determine and report on the effectiveness of the program. This can also lead to a lack of understanding of roles, responsibilities, and accountabilities.

¹ See Appendix 2 for a list of the 16 Cities including the York Region responding to our questions.

Recommendation 1

Strategic Plan and Performance Management Framework

Recommendation

Develop a strategic plan and performance management framework for the City's Emergency Management Program that is approved by the Emergency Management Advisory Committee.



Responsible party:

City Manager (Director of the Emergency Management Agency)



Accepted by Management

Management Response

A stand-alone strategic plan will be developed for the City of Edmonton's Emergency Management Program, including a performance management framework. Initial foundational work has been directed to identifying goals and objectives for the Emergency Management Program as part of the Fire Rescue Master Plan. Performance indicators are being developed for the Emergency Management Program and these will help support the development of an overall performance management framework. Finally, regular engagement of the Emergency Management Advisory Committee will support communication and approval of the strategic plan.



Implementation by:

December 20, 2020



Governance Documents

Summary of Findings

The City does not have a process for reviewing and updating the City's Emergency Management Program governance documents (Bylaw and Municipal Emergency Plan). The current governance documents are outdated and do not align with best practice.

What does the City have in place?

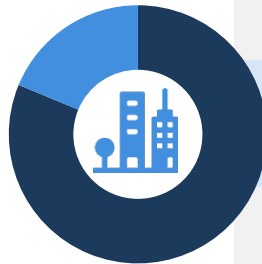
The City's Municipal Emergency Plan is from 2004 and the Emergency Management Bylaw was last updated (consolidated) in 2012. Potential updates have been discussed. However, Management intends to make these after amendments to the Alberta Emergency Management Act take effect in 2020.

We compared the City's governance documents to best practice standards from 2 industry groups (CSA's Z1600-17 Emergency and Continuity Program Standards and EMAP's Emergency Management Standards (2016)). We identified a total of 32 standards that relate to governance practices in the 2 sets of best practice.

Of these 32 standards we found that the City had implemented and was consistently performing only 7 of them. Key standards not implemented include:

- Establishment of program goals, objectives, and performance measures that are integrated into the organization's overarching goals and objectives.
- Ensuring the program complies with applicable legislation, regulatory requirements, orders, directives, and policies.
- Instituting an ongoing process to monitor the sources of risk.
- Including a process utilizing one or more committees that provides for coordinated input by stakeholders in the preparation, implementation, evaluation, and revision of the Program.
- Including a method and schedule for evaluation, maintenance, and revision of the procedures identified in the Plans for 1) Emergency Operations, 2) Recovery, 3) Continuity of Operations, and 4) Continuity of Government.

What are other cities doing?



16 receive authority from provincial legislation

13 have an emergency management bylaw
(4 mentioned it is reviewed on an annual or 'as needed' basis)

16 have an emergency management policy
(8 mentioned it is reviewed and updated on an annual or regular basis)

Why is it important?

There are risks to out of date governance documents. If updates to planned actions, learnings from incidents and exercises are not formally recorded and incorporated into the plan, then, the actual plan for the City is not adequately documented. This may lead to confusion and miscommunication during an actual incident. Further, without regular updates to governance documents, best practices may not be incorporated into plans on a timely basis.

(Recommendation 2)



Roles and Responsibilities

Summary of Findings

Emergency Management Program roles and responsibilities are not clearly defined, communicated, or performed.

Unclear Roles and Responsibilities

We asked members of the Agency and Advisory Committee if their roles and responsibilities were clearly defined in the Emergency Management Program governing documents:



5 out of the 7 Agency members who responded to our questions said their roles and responsibilities were clearly defined.



4 out of the 9 Advisory Committee members who responded to our questions said their roles and responsibilities are clearly defined.

Agency members were more likely to think their roles and responsibilities are clearly defined than Advisory Committee members.

Our review of the Bylaw and the Municipal Emergency Plan found that there are some sections where wording is not clear or does not reflect the actual roles and responsibilities of the parties. Examples include:

1. *Post incident reviews* – There is a conflict between the responsibilities required of the Director of the Agency and the Director of the Office of Emergency Management. According to the Municipal Emergency Plan, the Director of the Agency must ensure that post-incident debriefings occur and a final report is prepared. However, the Municipal Emergency Plan indicates that the Director of the Office of Emergency Management can use discretion as to whether the review (i.e., a debriefing) actually occurs.
2. *Preparation and coordination of the Municipal Emergency Plan* - The Bylaw states that the Director of the Agency “must prepare and co-ordinate the Municipal Emergency Plan and related plans and programs for the City.” This statement is a requirement of the Alberta Emergency Management Act. However, the Bylaw is not clear as to

how the City will achieve this. This work would actually be performed by the Director of the Office of Emergency Management. Along with the Advisory Committee, the Agency's role would be to review and approve the plans and programs.

3. *Director of the Emergency Operations Centre* – It is not clear in Annex A “Emergency Operations Centre” of the Municipal Emergency Plan who should be designated as the Director of the Emergency Operations Centre. Further, the responsibilities listed for the Office of Emergency Management do not make mention for any staff to assume the role as the Director of the Emergency Operations Centre.
4. *Coordination of emergency services and resources* – The Bylaw states that the Director of the Agency is required to “coordinate all emergency services and other resources used in an emergency.” This statement is a requirement of the Alberta Emergency Management Act. However, the Bylaw is not clear as to how the City will achieve this. This work would be performed by the Director of the Office of Emergency Management or designated staff while acting in the capacity as the Director of the Emergency Operations Centre.
5. *Deletion of responsibilities under Section 12* – The Bylaw states that a function of the Emergency Management Advisory Committee is to have the power to declare, renew, or terminate a State of Local Emergency and put “plans into operations as specified in Section 12 of this bylaw...” There is currently no Section 12 in the Bylaw, so it is unclear what these plans are.
6. *Committee's power to acquire funds and property* – The Bylaw provides authority for the Advisory Committee to, borrow, levy, appropriate, and expend without elector consent, all amounts required for the operation of the Agency. The cost to sustain the Agency during an emergency would likely be minimal and should pale in comparison to what the Emergency Operations Centre would incur over a protracted period. The intent of the subsection is to raise funds or acquire property to sustain the Emergency Operations Centre, rather than the Agency.

Communication of Roles and Responsibilities

The City does not have a formal method of communicating roles and responsibilities on a regular basis and ensuring all stakeholders know and understand them. They have however, been communicating with stakeholders on an ad hoc basis. We found some stakeholders seem to be comfortable with their knowledge of their roles and responsibilities better than others.



We asked 22 Branch Managers and Directors whose areas are mentioned in the Municipal Emergency Plan if they were aware of their roles and responsibilities in the plan. 12 people responded, all of whom said they are aware of their areas' roles and responsibilities. Of the 12, 9 said they would be comfortable or very comfortable fulfilling their roles and responsibilities in the event of a wide spread disaster or emergency.



There are also a number of external stakeholders specifically mentioned in the Plan (e.g., Alberta Health, EPCOR, ATCO, and the Red Cross). The City has recently communicated the roles and responsibilities with about half of these groups.



7 out of the 7 Agency members who responded to our questions said they would be comfortable or very comfortable fulfilling their roles and responsibilities in the event of a wide spread disaster or emergency.



The stakeholder group least comfortable with their roles and responsibilities are the members of the Advisory Committee. 3 of the 9 Advisory Committee members who responded to our questions said they would be comfortable fulfilling their roles and responsibilities in the event of a wide spread disaster or emergency.

Roles and Responsibilities Not Performed

The City is also not performing all the responsibilities required by the Bylaw and the Municipal Emergency Plan. We identified nine actionable responsibilities required under Bylaw and the Plan and found the following six that have not been performed consistently or even at all:

1. Audits of the Municipal Emergency Plan.
2. Maintaining and updating the Municipal Emergency Plan (and related plans and programs).
3. Ensuring the Municipal Emergency Plan is reviewed by the Office of Emergency Management.
4. Ensuring the Advisory Committee is briefed on the Emergency Management Program and Plan.
5. Ensuring that post-incident debriefings occur and a final report is prepared for the Advisory Committee.
6. The Advisory Committee reviews the Municipal Emergency Plan and related plans and programs.

Without assignment of roles and responsibilities, as well as their clarification and communication of them to the most appropriate party, there is a risk that some powers, duties, functions will not be performed or carried out as required. Stakeholders may not know and understand their roles and responsibilities. This may impact the effectiveness or efficiency of emergency actions including the response and recovery phases. **(Recommendation 2)**

Recommendation 2
Governing Documents

Recommendation

Review, update, and adhere to the Emergency Management Program governing documents. This should include:

- Clearly defining and communicating roles, responsibilities, relationships, and authorities.
- A method and schedule for the evaluation, maintenance, and revision of the document.



Responsible party:

City Manager (Director of the Emergency Management Agency)



Accepted by Management

Management Response

A plan to regularly review, evaluate, and update the Emergency Management Program governing documents (the City's Emergency Management Bylaw 14737 and Municipal Emergency Plan - Policy C508) will be developed and implemented. A review of the Municipal Emergency Plan is underway and will include revisions specific to new regulations from the Government of Alberta that are expected to be effective as of January 2020.

Exercises and information sessions held with the Emergency Management Agency and Committee in 2018 and a formal meeting of the Emergency Management Advisory Committee in 2019 have helped to clarify and communicate roles and responsibilities within the program. Further work will be completed to create role profiles with clearly defined responsibilities and authorities as well as a communications plan.



Implementation:

December 20, 2020



Effectiveness of Organizational Structure

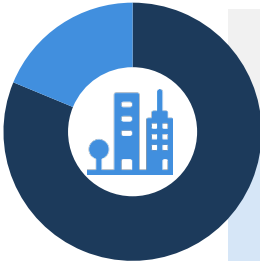
Summary of Findings

Until the City develops a strategic plan for the program that clearly defines the roles, responsibilities, and accountability of the Office of Emergency Management, it will not be clear whether the organizational structure is effective.

Organizational Structure

The Office of Emergency Management section is one of five sections within the Fire Rescue Services Branch. The Fire Rescue Services Branch in turn is one of five branches within the Citizen Services Department.

What are other cities doing?



Almost half (7) of Canadian cities had placed their emergency management offices within their fire departments/branches.

The remaining offices were located in areas such as police services, community services, human resources, or reporting directly to the chief administrative officer.

Effectiveness

The current placement of the Office of Emergency Management may not be optimal from an authority and influence perspective within the corporation. The lapses in performance of requirements and responsibilities discussed earlier in this report are an indication of this.

We believe that if the recommendations in this report are implemented, program governance would be improved and may limit any possible negative consequences related to placement organizationally. However, in the future, administration has the option of considering moving the Office of Emergency Management if program goals are not being met as anticipated.



Hazard Identification and Risk Assessment

Summary of Findings

The City currently does not have a formal process for preparing, reviewing, and communicating its Hazard Identification and Risk Assessment.

What is a Hazard Identification and Risk Assessment?

A Hazard Identification and Risk Assessment is a risk assessment tool that is used to assess which disasters and hazards pose the greatest risk to the City in terms of how likely they are to occur and how great their potential impact may be.

Why is it important?

An effective Hazard Identification and Risk Assessment will enable the City to identify its highest priority hazard risks so that it can make informed, evidence-based decisions about planning and mitigation efforts and ensure that it is getting the most value from the programs/projects funded. The Hazard Identification and Risk Assessment will also help the City better prepare to respond to actual disasters or emergencies.

If a Hazard Identification and Risk Assessment is done poorly mitigation measures may be insufficient, plans could fall short, response capabilities and capacities may be insufficient and recovery could be prolonged and with unacceptable consequences.

What does the City have in place?

Prior to finalizing the Municipal Emergency Plan in May 2004, the City performed a hazard analysis to identify situations that have a potential for disrupting the community, causing casualties, or destroying public and private property. From this, the most likely hazards that could impact the City were determined. This analysis was the foundation for developing response plans specific to the identified hazards.

The City developed Hazard Specific Contingency Plans for the following threats:



Hazardous Material/Dangerous Goods Incident



Public Health Emergency



Tornado



Flood



Terrorist Incident

The Municipal Emergency Plans mentions that the City will modify the Specific Hazard Contingency Plans as it identifies new hazards and develops plans for those hazards. However, the City does not have a formal process for this update and it has not occurred.

Emergency Management Agency and Advisory Committee members felt the City should be evaluating and updating its Hazard Identification and Risk Assessment at least annually and some even thought it should be more frequent than that.

What should they have in place?

There are six key elements for risk identification and assessment processes.



Identification

Identify the natural and human-caused hazards that may be a threat to the community.



Assessment

Examine the **likelihood** of the hazard occurring and the potential **impacts** of the hazard on people, property, the environment, business and finance, and critical infrastructure.



Prioritization

Rank the hazards to highlight the ones that should be considered a current priority for the emergency management program.



Evaluation

Evaluate the **adequacy of existing prevention and mitigation strategies** and programs to identify remaining risks for which emergency and continuity management strategies or plans are required.



Monitoring

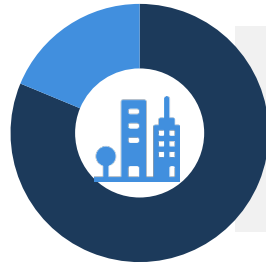
Include a method and schedule for **evaluation, maintenance, and revision** of its Hazard Identification and Risk Assessment.



Communication

Present results to stakeholders and in a format that is understandable, relevant and useful to inform mitigation and preparedness activities.

What are other cities doing?



15 out of 16 cities said they complete a Hazard Identification and Risk Assessment.

Of those, 10 said they review or update their Hazard Identification and Risk Assessment annually or regularly.

Why is it important?

The risk of not having an effective Hazard Identification and Risk Assessment system, based on best practice, are that the City may not be making the most informed decisions about planning and mitigation efforts. It may also not be getting the most value from the programs/projects funded. A Hazard Identification and Risk Assessment will also ensure the City is better prepared to respond to the remaining risks.

Recommendation

Recommendation 3
Hazard Identification and Risk Assessment

Recommendation

Develop and implement a process to create and update a Hazard Identification and Risk Assessment based on best practices.



Responsible party:

City Manager (Director of the Emergency Management Agency)



Accepted by Management

Management Response

The Hazard Analysis contained within the Municipal Emergency Plan identifies a number of hazards that while still relevant in the case of a major emergency or disaster, require a refresh and alignment with the City of Edmonton's overall Enterprise Risk Management

Program and to current best practices. A process will be put in place to regularly identify, review, and prioritize hazards within the Emergency Management Program using a Hazard Identification and Risk Assessment standard that clearly articulates the highest priority hazard risks and corresponding risk mitigations.



Implementation:

December 20, 2020



Appendix 1 – Audit Risk Assessment and Methodology

Audit Risk Assessment

During our audit risk assessment, we identified the following potential risks to the City’s Emergency Management Program:

- The level of engagement by the Advisory Committee and the Agency.
- The lack of business continuity planning at a corporate level.
- The lack of review, monitoring and updating of emergency management program and program elements (including governing documents and Hazard Identification Risk Assessment).
- The potential for unclear or misunderstood roles, responsibilities, and accountabilities of the Office of Emergency Management, the Agency, and the Advisory Committee.

These risks formed the basis of our audit objectives and audit program.

Methodology

We used the following methods to conduct this review:

- Review of key documentation (e.g., governing documents, meeting minutes, training materials, etc.)
- Review of best practice in Emergency Management Programs:
 - CSA Z1600-17 Emergency and Continuity Program Standards and
 - EMAP’s Emergency Management Standards (2016)
- Review of best practice in risk assessment:
 - ISO 31000 Risk Management Guidelines
 - CSA Z1600-17 Emergency and Continuity Program Standards
 - Province of Ontario Hazard Identification and Risk Assessment Workbook (2012)
 - United Nations Office for Disaster Risk Reduction - National Disaster Risk Assessment 2017 (Supports Sendai Framework)
 - EMAP’s Emergency Management Standards (2016)

- Discussions with management.
- Questionnaires sent to all 11 members of the Emergency Management Agency. We received responses from 7 members.
- Questionnaires sent to all 13 members of the Emergency Management Advisory Committee. We received responses from 9 members.
- Questionnaires sent to other Canadian municipalities. We received responses from 16 cities. See Appendix 2 for a listing of the Cities.

Statement of Professional
Practice

This project was conducted in accordance with the International Standards for the Professional Practice of Internal Auditing.



Appendix 2 – Cities Responding to Questions



City	Population	2018 Emergency Management Program Budget	2018 Emergency Management Program FTE's
Edmonton	980,000	\$1,346,000	8
Brampton	630,000	\$773,000	8
Calgary	1,267,344	\$5,176,000	27
Gatineau	285,000	\$207,000	1
Halifax	500,000	\$170,000	1
Laval	425,000	\$321,000	5
London	384,000	\$398,000	3
Mississauga	721,599	\$603,000	5
Montreal	1,704,694	Not provided	12
Ottawa	934,240	\$932,000	6
Red Deer	101,000	\$198,000	1
Regina	220,000	\$304,000	2
Saskatoon	250,000	\$425,000	3
Toronto	2,810,000	\$3,000,000	17
Vancouver	631,486	\$1,600,000	11
Winnipeg	700,000	\$1,150,000	4.5
York Region	1,200,000	\$951,000	5