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# *City of Saskatoon* Business Continuity Internal Audit Report

*June 2018*



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# *Executive Summary*

The City of Saskatoon's (the "City") Strategic Risk Register identifies Business Continuity as a high priority strategic risk, in that "The City may not be prepared to quickly and effectively resume operations in the event of serious incident, accident, disaster or emergency." As a result, Business Continuity was included as one of the subject matter areas in the 2017 Internal Audit Plan.

Business Continuity is the capability of the City to continue the delivery of services at acceptable predefined levels following a disruptive incident or event. While disruptive incidents or events may not arise on a regular basis, it is critical for organizations and municipalities to prepare for such occurrences. With the emphasis that the City has placed over the course of the last year on defining and publishing service levels for various areas of service, the ability to maintain and/or resume operations following a disruptive incident or event takes on heightened importance.

The main purpose of Business Continuity at a municipality is to ensure the safety of its citizens and employees while ensuring continuation of services during and following a natural or man-made disruption. Delays in resuming operations following a disruption can cause significant safety, regulatory, operational, financial or reputational impacts. The closure of Martensville city hall following a burst water pipe in October of 2017 provided a recent, real life local example of the importance of Business Continuity.

Many organizations approach the subject of Business Continuity by establishing and maintaining a Business Continuity Management System. A Business Continuity Management System typically includes the following elements:

- Charter;
- Policies;
- Planning activities;
- Assigned responsibilities;
- Procedures;
- Processes; and
- Resources (to establish and maintain the above elements).

The objectives of this project were to:

- Provide an assessment of the current level of maturity of the City's strategy for maintaining and operating a Business Continuity Management System as well as an assessment of the adequacy of resources available for tactical execution of the strategy.
- Provide the City Administration with support in creating and completing Business Impact Analysis and Business Continuity Plans for critical services or functions.

The overall conclusion and theme of the findings is that the City would benefit from the implementation of a Business Continuity Management System to reduce its exposure from an unexpected disruption of its critical services or functions. The City undertook a similar process related to the implementation of a Risk Based Management Program in 2014 and elements of that implementation are relevant to consider for a potential Business Continuity Management System implementation. For clarity, the parallel to be drawn is not necessarily one of similarities between a Risk Based Management Program and a Business

Continuity Management System, but rather the fact that the City has been through a process of developing an end-to-end program from inception to implementation in recent years and that experience is a useful reference point as the journey towards implementing a Business Continuity Management System begins.

The recommendations provided in this report are aimed at providing guidance to the City Administration in continuing its efforts towards addressing the high priority strategic risk that it “may not be prepared to quickly and effectively resume operations in the event of serious incident, accident, disaster or emergency.”

### **Assessment**

Internal Audit assessed the governance, systems, processes, and controls in place to execute Business Continuity at the City. This assessment was performed using PwC’s Health Check Tool, which leverages information and comparatives founded upon the ISO 22301:2012 standard[1].

Our report includes commentary with respect to staff resources required to establish and maintain the City’s Business Continuity efforts. Our comments concerning staff resources are based on suggested minimum resources required for the City and take into account the number of designated Business Continuity resources in place at a sample of comparable municipalities. Most municipalities of a comparable size have at least one full-time employee dedicated to Business Continuity.

Overall, our assessment determined that the City is currently at a low level of maturity with respect to Business Continuity. However, throughout the course of the project and by virtue of our interactions with project participants, we found that many Directors are aware of the actions they would need to take following a business disruption, even if they have not considered or secured the resources or support to take those actions.

Implementing the recommendations of this report will reduce the City’s risk of not being fully prepared to continue or resume operations following a business disruption. Over time, as the City implements the recommendations, it will have the ability to move up the ISO 22301:2012 Business Continuity maturity scale to the extent desired. Section 3 (“Assessment Results”) provides further information regarding our assessment and Section 5 (“BCMS Lifecycle Activities and Related Audit Observations”) provides further information on the lifecycle of a Business Continuity Management System.

### **Workshops**

Internal Audit drafted an Impact Framework based on impact *categories* relevant to a municipality (e.g. high, medium or low when taking into account health and safety, regulatory, legal, and environmental factors) and then met with the Leadership Team (now the Administrative Leadership Team) to obtain its assessment of the impact *timing* for City departments following a business disruption. This assessment involved considering whether the impact would be high or low within predetermined impact categories. Appendix 2 contains a copy of the Impact Framework Categories used in the assessment.

Subsequently, five Business Impact Business Impact Analysis workshops were held on October 23 and 24, 2017 with Directors and relevant Information Technology staff to identify critical business functions and the timelines required to recover them. Following the BIA workshops, Business Continuity Plan workshops were held with a select group of Directors who manage services that are more time sensitive with regards to business disruptions. Section 4 (“Workshops”) provides further information with respect to both the Business Impact Analysis and Business Continuity Plan workshops.

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[1] ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies. ISO 22301:2012 specifies requirements for setting up and managing an effective Business Continuity Management System.

### ***Roadmap for Business Continuity Management System at the City***

We have identified a high-level roadmap to assist the City's Administration in prioritizing the tasks required to establish a Business Continuity Management System. Administration will need to supplement this roadmap by assigning tasks and deliverables to specific individuals or groups and obtaining commitments to timelines from those individuals or groups. Based on our understanding of the City's current state with respect to Business Continuity, we suggest that the City approach the implementation of the audit recommendations by following the sequential next steps identified below, which can be segregated into three tiers: Immediate Ongoing Actions, Follow-Up Planning and Preparation Actions, and Creation of the Business Continuity Management System.

#### **Tier 1: Immediate Ongoing Actions**

These "Immediate Ongoing Actions" represent the continued analysis required to serve as the foundation for the establishment of a Business Continuity Management System. These "Immediate Ongoing Actions" directly correlate to recommendations #1 to #3 and can be summarized at a high level as:

- Continuing to collect information on the resources needed to carry out each critical business process/function at an acceptable level as identified in the Business Impact Analysis workshops; and
- Leveraging this information to perform a Continuity Resource Requirements analysis to identify the "assets" that would be required to perform each of the most time sensitive processes at an acceptable level during a period of disruption. Assets include personnel (including third parties), technology and data, equipment and facilities, and funding.

Directors would need to coordinate with Information Technology to have their data and system requirements assessed and any gaps in current capability or availability would be included in the Continuity Resource Requirements analysis. The results of the Continuity Resource Requirements analysis would be reported to the Administrative Leadership Team, with an emphasis on potential funding needs identified.

#### **Tier 2: Follow-Up Planning and Preparation Actions**

These "Follow-Up Planning and Preparation Actions" represent the next logical steps following the completion of the analysis and reporting contained in the "Immediate Ongoing Actions" tier. Some of these activities could run concurrently with the "Immediate Ongoing Actions" however the conclusion of the initial analysis and reporting is fundamental to the follow-up planning and preparation. These "Follow-Up Planning and Preparation Actions" directly correlate to recommendations #4 to #7 and can be summarized at a high level as:

- Developing a Business Continuity Management System Charter to define overall accountability and responsibility for the City's Business Continuity Management System;
- Developing a Business Continuity Policy underlying the charter to clearly articulate the purpose, context, scope and governance of the Business Continuity Management System; and
- Establishing a Business Continuity Committee with responsibility for the continuous monitoring of Business Continuity activities, with specific responsibilities including:
  - Oversight and support of the Business Continuity Management System;
  - Ensuring the Business Continuity Management System complies with the Business Continuity Policy;
  - Monitoring and reporting on the adequacy of staff and other resource needs.

The Business Continuity Committee would also monitor progress of the initial establishment of a Business Continuity Management System. The concept of a Business Continuity Committee would follow the same model that is currently being utilized by the City for its Corporate Risk Committee. The Business Continuity Committee would similarly report to the Standing Policy Committee on Finance and City Council on a summary of Business Continuity activities each year. The Business Continuity Committee would be a key component of the Business Continuity Management System, just as the Corporate Risk Committee is to the City's Risk Based Management Program. The rationale for having the Business Continuity Committee report to the Standing Policy Committee on Finance is that there is a far reaching, City-wide impact of the activities of the Business Continuity Committee, just as there is for the activities of the Corporate Risk Committee.

### **Tier 3: Creation of the Business Continuity Management System**

Once the "Immediate Ongoing Actions" related to the Business Impact Analysis work are complete and the "Follow-Up Planning and Preparation Actions" related to the Charter, Policy, and Committee have been undertaken, the Administration would then work towards creating the full Business Continuity Management System. While the Business Continuity Management System, and the process to establish it, would bear similarities to the previously mentioned Risk Based Management Program that the City implemented in 2014, it would be a larger undertaking. The steps to Creation of the Business Continuity Management System directly correlate with the remaining recommendations (#8 to #26).

Specifically with respect to resourcing, the assignment of dedicated full time staff to Business Continuity is critical and would recognize the long-term commitment required to maintain the City's Business Continuity Management System in order to manage and mitigate risks related to business disruptions. The risk of not assigning adequate resources to establish and maintain the Business Continuity Management System is that the City may not be in a position to meet its regulatory or service level commitments in the event of a business disruption. With the emphasis that the City has placed over the course of the last year on defining and publishing service levels for various areas of service, the ability to maintain and/or resume operations following a disruptive incident or event takes on heightened importance.

These recommendations were developed based on the previously noted PwC Health Check Tool. Using this as a baseline, and complemented by the context contained within this report, the recommendations have been tailored to a municipal context and with consideration to the City's current facts and circumstances. Once the "Immediate Ongoing Actions" and "Follow-Up Planning and Preparation Actions" are complete, the further design and implementation of the Business Continuity Management System will be the responsibility of the designated individual(s) within the City's Administration.

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# 1. Overview and Glossary

## 1.1 Strategic Risk

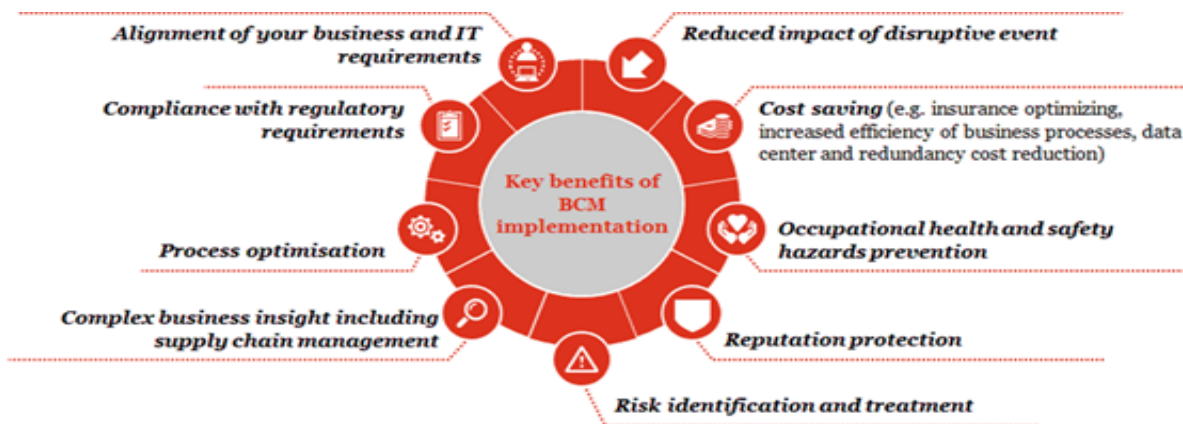
The City's Strategic Risk Register identifies Business Continuity as a high priority strategic risk for the City. Risk A&FS-1 states that *"The City may not be prepared to quickly and effectively resume operations in the event of a serious incident, accident, disaster or emergency"*. Root causes identified by the City for not being adequately prepared are resource constraints, competing priorities, and lack of knowledge or understanding related to the risk.

## 1.2 Background

Business Continuity is defined as sustaining an organization's essential functions and processes during and after a disruption. Business Continuity Management provides a framework for an organization to restore its critical operational activities, manage communications, and minimize financial and other negative effects caused by a disruption to normal operating activities.

Business Continuity includes both technology recovery capability (often referred to as disaster recovery) and business unit recovery capability. When developing Business Continuity Plans, an organization typically considers the impact of various natural or human-made business disruptions or disasters that differ in severity. These business disruptions or disasters may or may not be predictable, however they are typically short in duration or have limited scope. There are many benefits to having a Business Continuity Management System, some of which are illustrated in the diagram below.

**Diagram 1: Benefits of a Business Continuity Management System**



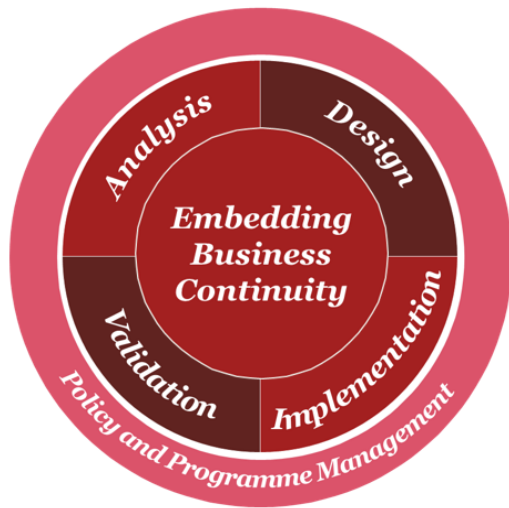
## 1.3 Introduction

Business Continuity Management serves as one element of an organization's overall governance, risk and compliance efforts. At a high level, a Business Continuity Management System is comprised of the following components:

- Established Business Continuity Management governance structure;
- Completed and documented Business Impact Analysis;
- Developed and documented Business Continuity Plans and required resources; and
- Maintenance of Business Continuity Management adequacy and readiness.

The diagram below illustrates the Business Continuity Management Lifecycle. Section 5 provides a description of the activities for each phase of the lifecycle along with our audit observations relating to each phase. Recommendations to support the City in the development of its Business Continuity Management System are listed in Appendix 1. These recommendations were developed based on the PwC Health Check Tool. Using this as a baseline, and complemented by the context contained within this report, the recommendations have been tailored to a municipal context and with consideration for the City's current facts and circumstances.

**Diagram 2: Business Continuity Management Lifecycle**



The BCM Lifecycle diagram shows the phases of activities that an organization moves through and repeats with the overall aim of improving organizational resilience.

The benefits of developing a Business Continuity Management System to manage Business Continuity risks include the following:

- Ensuring the safety of the public and employees;
- Avoiding negative regulatory or legal implications;
- Reducing the impact related to a disruption of services or operations;
- Minimizing the cost to recover normal operating levels;
- Protecting the critical infrastructure of the City; and
- Protecting the City's reputation.

Implementing an organization-wide and fully embedded Business Continuity Management System will be a process that occurs over at least several months. The next steps and audit recommendations in this report are directly linked to the Business Continuity Management Lifecycle and are intended to provide direction to the Administration.



## 1.4 Glossary

The discussion of Business Continuity can involve the use of a significant number of terms and acronyms. For the benefit of the reader, these terms and acronyms are summarized in the table immediately below.

Term	Definition
Asset Classes	Personnel (including third parties), technology and data, equipment and facilities, funding.
Business Continuity	The capability of the City to continue the delivery of services at acceptable predefined levels following a Disruptive Event.
Business Continuity Management or “BCM”	Holistic management process that identifies potential threats to the City from security incidents, disruptions, or emergencies and the impacts to business operations those threats might cause. Also provides a framework for building organizational resilience with the capability of an effective response that safeguards the interests of the public, City employees, City assets and the City’s reputation.
Business Continuity Management System or “BCMS”	Part of the overall management system that establishes, implements, operates, monitors, reviews, maintains and improves Business Continuity.
Business Continuity Plans or “BCPs”	Documented procedures that guide the City to respond, recover, resume, and restore to a pre-defined level of operation following the occurrence of a Disruptive Event.
Business Continuity Strategies	Comprehensive strategies to recover, resume, and maintain all critical services and business functions.
Business Impact Analysis or “BIA”	The process of analyzing activities and the effect that a Disruptive Event might have upon them.
Continuity Resource Requirements Analysis or “CRR”	Identifies the “assets” (see “Asset Classes” definition above) that would be required to perform each of the most time sensitive processes at an acceptable level during a period of disruption.
Critical Business Function or “CBF”	Business functions or processes that must be restored in the event of a disruption to ensure the ability to protect the City’s assets, meet organizational needs, and satisfy regulations.
Disaster Recovery	Addresses the restoration of business system software, hardware and data during an incident.
Disruptive Event	A situation that might be, or could lead to, a security incident, disruption, or emergency.

Exercise	Refers to a process to train for, assess, practice, evaluate effectiveness, and improve Business Continuity performance.
Full Scale Exercise	Simulates an actual event and may include external stakeholders. It is intended to evaluate the Business Continuity Plan under simulated stressful conditions.
Maximum Tolerable Period of Disruption or “MTPD”	The time it takes for an adverse impact of not delivering a service or performing an activity to become unacceptable.
Notification Drill	Includes actual testing of the communication tools and contact information for Business Continuity team responders, and may include testing notification information for suppliers and/or stakeholders.
Risk Appetite	Amount and type of risks that the City is willing to accept and/or absorb.
Recovery Point Objective or “RPO”	Acceptable amount of data lost, measured in time, in the case of a disruptive event.
Recovery Time Objective or “RTO”	Period of time within which systems, applications, processes, or functions must be recovered after an outage.
Table Top Exercise	Planned and structured walk-through test using a specific event scenario that is applied to the Business Continuity Plan.
Test	Incorporates the expectation of a pass or fail element within the exercise; usually applied to equipment or technology with the Business Continuity Plan and not the performance of the team itself.

# 2. Objectives, Scope, Approach

## 2.1 Objectives

The objectives of this project were to:

1. Provide an assessment of the current level of maturity of the City’s strategy for maintaining and operating a BCMS as well as an assessment of the adequacy of resources available for tactical execution of the strategy.
2. Provide the Administration with support in creating and completing both BIA and BCPs for critical services or functions.

## 2.2 Scope

This report contains observations and recommendations focused on the City’s ability to respond to business disruptions and does not speak to the City’s ability to respond to an emergency. Emergency response falls under the responsibility of the Director of Emergency Planning and was considered to be out of scope for this project. The Saskatoon Police Services were also considered out of scope for this project.

All divisions were included in the BIA workshops and select divisions were included in the BCP workshops.

## 2.3 Methodology and Approach

PwC’s global BCM methodology was leveraged to conduct this project. PwC’s BCM methodology addresses an organization’s priorities to ensure that employee protection, customer service, and reputational protection are well managed.

PwC’s BCM methodology combines key attributes from the three relevant preparedness standards noted below as well as other relevant leading practice guidance and various regulatory requirements.

<b>Standard</b>	<b>Description</b>
ISO 22301-2012	Specifies requirements to establish a BCM system.
ISO/PAS 22399-2007	General guidance for the understanding, development and implementation of a system for incident preparedness and operational continuity.
NFPA 1600-2009	Common set of criteria for disaster and emergency management.

Our approach for this project was to conduct connected phases that, when combined, provide the City with recommendations for implementing and maintaining a fully integrated, organization-wide BCMS.

Specifically in relation to Objective 1, our approach was to assess whether the City’s current strategy to address business disruptions is appropriate and whether there are adequate resources in place to support it. At the outset of the project, we were aware that the City did not yet have a corporate-wide program in place to address Business Continuity. Currently, processes and plans to address business disruptions are

in progress but not yet complete. Some service lines in the City have documented plans, which has arisen primarily as a result of the need to comply with specific legislation in certain areas of the City's operations. The intent of the work performed related to Objective 1 was to generate observations, recommendations and action items that would enable the City to further develop its plans related to Business Continuity.

Specifically in relation to Objective 2, our approach was to develop an Impact Framework based on impact categories relevant to a municipality to assist the Administration in assessing the impacts of business disruptions. We facilitated BIA and BCP workshops and provided tailored templates and documents to guide and support the Administration through these processes.

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## 3. Assessment Results

Internal Audit assessed the governance, systems, processes and controls in place to execute BCM at the City. This assessment was performed using PwC's Health Check Tool. The tool assists in establishing the maturity level of an organization's BCM competence and capabilities.

As noted in Section 2, at the outset of the project it was acknowledged that the City was in the early stages of its planning for a BCMS. As a result, the purpose of conducting our assessment was to provide a baseline for the current state and a foundation for the recommendations that we sought to provide to the City. Internal Audit has taken into consideration various changes and progress made related to Business Continuity that occurred during the course of this project, including changes to the assigned responsibility for Business Continuity within the organization and the work done by the Administration in conducting business impact analysis.

The assessment supports the fact that the City does not currently have an organization-wide approach for addressing Business Continuity, which again was acknowledged by the City and Internal Audit at the outset of the project. The purpose of performing the assessment was to develop recommendations and actionable items to assist the City in establishing a BCMS and to identify the resources needed to support it.

### 3.1 PwC's Health Check Tool Results

Internal Audit rated the City's current state of Business Continuity, and developed our resulting recommendations, based on the results of our observations gained through reviewing City documents and conducting interviews and workshops with the Administration. PwC's Health Check Tool (based on ISO 22301:2012) consists of seven components, which are further divided into sub-components. Below is a brief description of each component within the tool:

1. **Organizational Context:** focuses on evidence that the organization has an understanding of needs and expectations of interested parties and has determined the scope of their BCMS.
2. **Leadership:** focuses on evidence of leadership and management commitment, the existence of a Business Continuity policy, and evidence of identified roles and responsibilities.
3. **Planning:** focuses on evidence that Business Continuity objectives have been established and are supported by documented plans to achieve them.
4. **Support:** focuses on evidence that adequate and competent resources are in place along with documented information.
5. **Operations:** focuses on evidence of a BIA having been performed and leveraged for the establishment and implementation of Business Continuity procedures and exercising and testing thereon.
6. **Performance Evaluation:** focuses on evidence of monitoring performance and reviews by management and others (e.g. internal audits).
7. **Improvement:** focuses on evidence of corrective action taken when non-conformity is identified as well as evidence of continuous improvement activities.

The table below lists the description for each rating used in the assessment. Rating levels of 0 to 2 would indicate a lower level of maturity for BCM of an organization. A "o" rating would typically mean that an organization or individual division or department reacts to disruptive events when they occur (e.g.

reactive rather than proactive) and that individual divisions or departments are left to themselves to organize, implement and monitor their own Business Continuity efforts.

An organization that reaches an overall rating of ‘3’ (60% threshold) which is described as “*Defined*”, is generally considered to be in compliance with the ISO standard. An organization may be higher in one component or sub-component than another and still achieve an overall rating of ‘3’.

**Table 1: Assessment Rating Levels**

Rating	Description
0	None
1	Initial
2	Repeatable
3	Defined
4	Managed
5	Optimizing

Internal Audit applied a rating of 0 to 5 for each of the sub-components within the ISO tool workbook. Although efforts in certain areas had begun to be made at the outset of the project, and continued to be made throughout the duration of the project, at the current time the City continues to score low in each of the seven components, indicating that the state of preparedness for disruptive events is currently low across the organization.

A rating of ‘1’ or “*Initial*” could be applied to the “Organizational Context” and “Operations” components based on the activities undertaken to-date by the Administration. This is as a result of the City beginning to understand the needs and expectations for Business Continuity across the organization and performing an initial BIA. In each of the seven components listed on the previous page, the recommendations in this report are intended to assist the City in evolving to its desired state of maturity. As this occurs, the risk related to business disruptions at the City will be reduced.

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## **4. Workshops**

To address Objective 2 of the project, a series of workshops was conducted with the Administration to support the completion of BIA documents across the organization and support was also provided with respect to the documentation of BCP's for critical services or functions. Initial templates to facilitate the documentation of the BIA and BCPs was provided to the Administration and were modified and tailored by the Director of Corporate Risk to best suit the City's needs.

### **4.1 Administrative Leadership Team Workshop**

On September 25, 2017, Internal Audit met with the Leadership Team (now the Administrative Leadership Team) to obtain their assessment of the impact timing for City departments following a business disruption. The assessment involved considering whether the impact would be high or low in five pre-determined impact categories across the City's areas of operations. We developed a BIA template that included an impact category matrix and was based on impact categories relevant to a municipality. The five impact categories used were as follows:

1. Health and Safety;
2. Regulatory/Legal/Environmental;
3. Operational;
4. Financial; and
5. Reputational.

Appendix 2 contains a copy of the Impact Framework Categories used in the assessment.

### **4.2 Business Impact Analysis (BIA) Workshops**

Internal Audit held BIA workshops on October 23 and 24, 2017 with Directors and relevant IT staff to identify critical business functions and the timelines required to recover them. The starting point for each workshop was the result of the Administrative Leadership Team workshop, namely their assessment of the impact timing for various areas of the City following a business disruption. In each workshop it was discussed whether the impact timings resonated with the individuals or if changes were needed. For some areas it was determined that there were different impact timings (based on criticality of the service or inter-divisional dependencies) within an area. In those instances, the impact analysis was further broken out in order to capture the specific impact timing for that specific service. For example within Parks, Urban Forestry was assessed as having an impact timing of days while other areas within Parks had an impact timing of weeks.

The assessment of business impact timing plays an essential role in the preparation of each BCP. The actions in each BCP enable a City division or service to resume business at a predetermined level within the BIA impact times. For example, if the BIA shows that a service is negatively impacted within hours, then the BCP will need to address resources and actions required to bring that service back to a predetermined level within hours. Following the BIA workshops, the Director of Corporate Risk met with certain Directors to assist in finalizing their assessments. Internal Audit updated the BIA from the workshops for any changes and re-circulated the BIA back to the Administration and other relevant Directors.

There is additional work remaining to be done for the BIA including identifying the CRR for the critical services or functions. This represents a continuation of the “Analysis” phase of the BCMS lifecycle (Section 5.2) that began with the BIA process during this project and forms the “Immediate Ongoing Actions” tier represented by recommendations #1 to #3.

### ***4.3 Business Continuity Plan (BCP) Workshops***

Internal Audit provided a draft BCP template to the Director of Corporate Risk, which was then tailored and modified to best suit the City’s needs. Internal Audit held BCP workshops on November 21 and 22, 2017 for selected Directors and Managers. At the workshops, the attendees were guided through the components of the BCP template and how to develop a BCP. The Directors were provided with a list of sample recovery strategies that could be adopted when determining the actions needed following a disruption. For example, if the disruption is due to a loss of access to a facility then potential recovery strategies include working from home, working from a third party site, establishing mutual aid agreements with another organization, or deferring functions/services until access is regained.

The workshop discussions also touched on the potential resourcing gaps to restore services in the timelines required. The Administration will need to further develop and document each BCP. This represents a continuation of the “Design” phase of the BCMS Lifecycle (Section 5.3), that began with the BCP process during this project and is represented by recommendations #12 through #16.

Once the Administration has documented all BCPs, IT will need to complete a review of the BCP’s in tandem with their own BCP in order to ensure that IT can provide adequate support to the City in the event that its own business operation is interrupted.



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# ***5 . BCMS Lifecycle Activities and Related Audit Observations***

Without a well-defined BCMS, the City is at risk of having ineffective responses to business disruptions, and ineffective responses could have negative consequences. For example, delays in resuming operations could have significant safety impacts in critical areas of operations such as water or roadways. When establishing a BCMS, the Administration should take into account the following requirements in order to assist in defining and documenting the boundaries and scope of the BCMS:

- City mandated services;
- Internal and external obligations (including to staff, taxpayers, and the public at large); and
- Legal and regulatory responsibilities.

In an organization as large and complex as the City, a fully scoped BCMS will take several months or more to fully develop and implement. We have identified “Immediate Ongoing Actions” (primarily related to Business Impact Analysis and related activities) and “Follow-Up Planning and Preparation Actions”, both of which are needed to lead into starting the development of the City’s BCMS. As these “Immediate Ongoing Actions” and “Follow-Up Planning and Preparation Actions” are undertaken, the Administration should continue the work it has begun on developing Business Continuity Plans for critical services and conducting discussion-based exercises.

Certain elements of the implementation of the Risk Based Management Program in 2014 are relevant to consider for a potential BCMS implementation. Although there are not necessarily similarities between the specific contents of the Risk Based Management Program and a BCMS, the fact that the City has been through a process of developing an end-to-end Risk Based Management Program from inception to implementation in recent years is a useful reference point as the journey towards implementing a BCMS begins.

## **Tier 1: Immediate Ongoing Actions**

These “Immediate Ongoing Actions” represent the continued analysis required to serve as the foundation for the establishment of a BCMS. These “Immediate Ongoing Actions” directly correlate to recommendations #1 to #3 and can be summarized at a high level as:

- Continuing to collect information on the resources needed to carry out each critical business process/function at an acceptable level as identified in the BIA workshops; and
- Leveraging this information to perform a CRR to identify the “assets” that would be required to perform each of the most time sensitive processes at an acceptable level during a period of disruption. Assets include personnel (including third parties), technology and data, equipment and facilities, and funding.

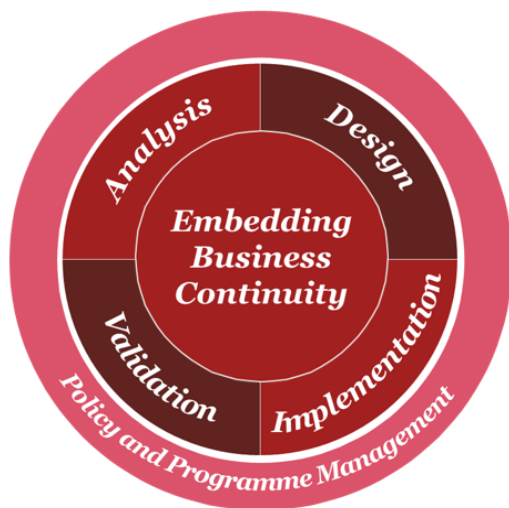
Directors would need to coordinate with Information Technology to have their data and system requirements assessed and any gaps in current capability or availability would be included in the CRR. CRR results would be reported to the Administrative Leadership Team, with an emphasis on potential funding needs identified.

## Tier 2: Follow-Up Planning and Preparation Actions

These “Follow-Up Planning and Preparation Actions” represent the next logical steps following the completion of the analysis and reporting contained in the “Immediate Ongoing Actions” tier. Some of these activities could run concurrently with the “Immediate Ongoing Actions”, however the conclusion of the initial analysis and reporting is fundamental to the follow-up planning and preparation. These “Follow-Up Planning and Preparation Actions” directly correlate to recommendations #4 to #7 and can be summarized at a high level as:

- Developing a BCMS Charter to define overall accountability and responsibility for the City’s BCMS;
- Developing a Business Continuity Policy underlying the charter to clearly articulate the purpose, context, scope and governance of the BCMS; and
- Establishing a Business Continuity Committee with responsibility for the continuous monitoring of Business Continuity activities, with specific responsibilities including:
  - Oversight and support of the BCMS;
  - Ensuring the BCMS complies with the Business Continuity Policy;
  - Monitoring and reporting on the adequacy of staff and other resource needs.

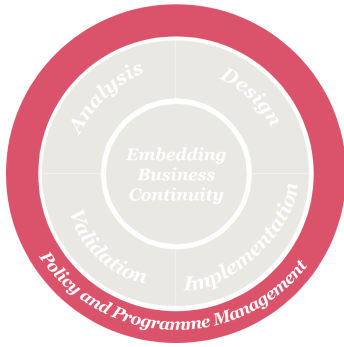
The BCMS Lifecycle diagram, as seen earlier in Diagram 2 (page 8) and repeated immediately below, illustrates the phases of BCMS and provides a roadmap for BCMS development from inception through to implementation. Sections 5.1 to 5.6 that follow include a description of the activities undertaken in the various phases of the BCMS Lifecycle. For each phase, we have included our observations relating the City’s current state and referenced the relevant recommendations included in Appendix 1.



The BCM Lifecycle diagram shows the phases of activities that an organization moves through and repeats with the overall aim of improving organizational resilience.

These recommendations are designed to address any gaps between the City’s current state and good practice and were developed based on the previously noted PwC Health Check Tool. Using this as a baseline, and complemented by the context contained within this report, the recommendations have been tailored to a municipal context and with consideration to the City’s current facts and circumstances. Once the “Immediate Ongoing Actions” and “Follow-Up Planning and Preparation Actions” are complete, the further design and implementation of the recommendations will be the responsibility of the designated individual(s) within the City’s Administration.

## 5.1 Policy and Program Management



The information that follows in this Section lists the components that are included in the *Policy and Program Management* phase of the BCMS Lifecycle. Recommendations #4 through #11 are specifically tailored to assist the City in taking the necessary actions related to this phase of the BCMS Lifecycle. In addition, a list of sample BCMS roles and the responsibilities and tasks that each role would take on in BCMS has been provided to the Administration.

### 5.1.1 BCMS Charter (Recommendation #4)

The purpose of the BCMS Charter is to define the overall organizational accountability and responsibility for the management of Business Continuity at an organization. The BCMS Charter typically contains the governance framework including the purpose, scope, standards and policy, roles and responsibilities of program team members, and reporting mechanisms to track key performance indicators (KPIs). When defining the scope of the BCMS for the City it would be in relation to services to citizens and the internal functions that support those services. If excluding a service from the BCMS Charter, the rationale should be documented with consideration to the risk implication to the City of the excluded service.

In March 2018, an illustrative table of contents for a BCMS Charter was provided to the Administration to illustrate the topics that the BCMS Charter typically addresses.

### 5.1.2 BCMS Sponsor (Recommendation #5)

The BCMS Sponsor provides leadership, commitment, and resources as part of the governance of the BCMS. In coordination with the Director of Emergency Planning, a sample of municipalities in the “Big Cities Emergency Planning Group” were surveyed with respect to leadership, staffing and monitoring of their respective BCMS. Of the municipalities that responded to the survey, one indicated that the City’s General Manager had overall responsibility for the BCMS, and the others indicated that the responsibility was with the leadership within their Emergency Management groups.

### 5.1.3 Business Continuity Committee (Recommendation #6)

This Committee would oversee the BCMS and provide direction and advice when needed. The Committee would also make recommendations to the BCMS Sponsor when needed. The Committee should be established with clear roles and responsibilities and would need to consist of members with authority to commit the City to action on Business Continuity.

The Business Continuity Committee would also monitor progress of the initial establishment of a BCMS. The concept of a Business Continuity Committee would follow the same model that is currently being utilized by the City for its Corporate Risk Committee. The Business Continuity Committee would similarly report to the Standing Policy Committee on Finance and City Council on a summary of Business Continuity activities each year. The Business Continuity Committee would be a key component of the

BCMS, just as the Corporate Risk Committee is to the City's Risk Based Management Program. The rationale for having the Business Continuity Committee report to the Standing Policy Committee on Finance is that there is a far reaching, City-wide impact of the activities of the Business Continuity Committee, just as there is for the activities of the Corporate Risk Committee.

#### 5.1.4 Business Continuity Policies (Recommendation #7)

The Business Continuity Policy "provides the intention and direction of an organization as formally expressed by top management" (source: ISO 22301:2012). Typically, senior management draft and review the Business Continuity Policy and the BCMS includes the ongoing activities undertaken to implement the policy. The policy provides a framework for setting Business Continuity Objectives, includes a commitment to satisfy applicable requirements, and includes a commitment to the continuous improvement of the BCMS. The policy needs to be compatible with the strategic direction of the City.

In March 2018, a Business Continuity Policy template was provided to the Administration to support the development of the City's policy. Additionally, the development of the Business Continuity Policy could be leveraged from elements of the "Corporate Governance - Risk Based Management" Policy (CO2-040) as there are parallels, as previously noted, between the development of the City's Risk Based Management Program in 2014 and the current efforts with respect to Business Continuity.

#### 5.1.5 BCMS Leader/Coordinator

This individual oversees the management of the BCMS, works closely with the owners of each individual BCP, and reports on the effectiveness of the BCMS to the Business Continuity Committee. The individual assigned to this role should have the appropriate education, training and experience to establish and maintain the BCMS. Similar to the fashion in which the Director of Corporate Risk is responsible for the City's Risk Based Management Program, a designated individual within the City would need to be responsible for the BCMS. This individual would typically reside in the area of Emergency Planning, although regardless of where the position resides within the City's organizational chart, significant partnership and cooperation from across the organization will be required in order for the BCMS initiative to be successful.

#### 5.1.6 Business Continuity Objectives (Recommendation #8)

Business Continuity Objectives should be established and communicated. There are at minimum two levels to consider when setting objectives: strategic and tactical. The strategic objectives are set for the entire BCMS and the tactical objectives relate to individual Business Continuity Plans and address such items as Recovery Time Objectives ("RTO's") and Recovery Point Objectives ("RPO's").

RPO's define acceptable amounts of lost data, measured in time, in the case of a disruptive event. RTO's define the period of time within which a business process and its associated applications must be functional again after a business interruption in order to prevent a defined amount of impact. Other levels of objectives can be set at the department or division level. Selecting an RTO is a balance between cost and speed of recovery because the shorter the RTO selected, the higher the cost will likely be to achieve it. At minimum, Business Continuity objectives should be established for all of the City's essential services.

The Business Continuity Objectives should align with the Business Continuity policy, take into account the minimum level of service that is acceptable to the City as well as any legal or regulatory requirements, and be measurable so that the objectives can be monitored and updated as appropriate. The Business Continuity Objectives should also align with the risk tolerance of the City as a whole, or to specific services where more applicable. For example, a zero tolerance with regard to potential loss of life. Risk tolerances were part of the discussions with the Administrative Leadership Team during the meeting on September

25, 2017; however, any formal outcome on risk tolerance would require input and approval from the Business Continuity Committee.

#### 5.1.7 Dedicated Resources - Staffing and Funding (Recommendation #9)

Prior to September 2017, the Director of Emergency Planning was responsible for Business Continuity along with Emergency Planning. Emergency Planning has limited resources as it consists of a Director, an EMO Coordinator and an Administrative staff member. The current level of resourcing may represent an impediment to moving forward with Business Continuity. Since September 2017 (and the departure of the former Director of Emergency Services), the Director of Corporate Risk had taken responsibility for leading Business Continuity efforts along with that position's other full-time duties and responsibilities. At the time of this report, no additional resources have been formally allocated to support Business Continuity.

As noted previously, in coordination with the Director of Emergency Planning, a sample of municipalities in the "Big Cities Emergency Planning Group" were surveyed. One of the survey questions pertained to how many dedicated staff their municipality has for its BCMS. The responses ranged from 1 dedicated FTE to 3 partly responsible FTEs to 1 dedicated FTE supplemented by 1 part-time individual. This is consistent with the majority of respondents to the Continuity Insights 2016 benchmark survey<sup>[2]</sup>, where on average respondents indicated that they had 1 to 2 FTEs dedicated to Business Continuity within their organization.

The assignment of dedicated full time staff to Business Continuity is critical and would recognize the long-term commitment required to maintain the City's BCMS in order to manage and mitigate risks related to business disruptions. The risk of not assigning adequate resources to establish and maintain the BCMS is that the City may not be in a position to meet its regulatory or service level commitments in the event of a business disruption. With the emphasis that the City has placed over the course of the last year on defining and publishing service levels for various areas of service, the ability to maintain and/or resume operations following a disruptive incident or event takes on heightened importance.

#### 5.1.8 Business Continuity Stewards (Recommendation #10)

At the time of the audit, the City had yet to establish Business Continuity response teams within each area. Ideally, a Business Continuity Steward would be assigned within each unit and this individual would be the point person for the BCMS Leader/Coordinator. The Business Continuity Stewards, along with their other day-to day job responsibilities, would coordinate the exercising of BCP's (Section 5.4) and the documentation of post-incident results to share with the BCMS Leader/Coordinator. During the project workshops that were held (described in Sections 4.2 and 4.3), some participants were able to identify potential individuals in their areas of service that would be suitable for the role of Business Continuity Stewards.

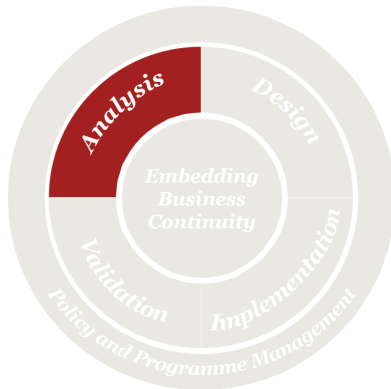
#### 5.1.9 Staff Competencies (Recommendation #11)

All City staff should have general awareness of the City's BCMS. Individuals assigned Business Continuity response roles should receive appropriate training. Some organizations involve their Business Continuity Committee in assessing training needs. Section 5.6 further discusses the need for awareness, communication and appropriate training.

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[2] 2016 Continuity Insights and KPMG LLP Global Business Continuity Management (BCM) Program Benchmarking Study. The study compiles responses to questions related to business continuity management from approximately 400 professionals including ones from government organizations.

## 5.2 Analysis



The *Analysis* phase involves analyzing activities related to the provision of services and the effect that a business disruption might have upon those activities. This analysis is typically undertaken in the form of a BIA.

As part of this project, workshops were held and initial templates provided to support the Administration in its BIA efforts. The templates were then modified and tailored by the Director of Corporate Risk to best suit the City's needs. Recommendations #1 to #3 represent the "Immediate Ongoing Actions" that are a critical component of the Administration's current Business Continuity efforts. These recommendations relate to the *Analysis* phase of the BCMS Lifecycle.

The BIA has two objectives:

- Identifying and prioritizing the most time sensitive service activities and ascertain the impact of a disruption on these activities in order to facilitate development of BCP's based on suitable strategies; and
- Identifying the continuity requirements (personnel, technology and data, equipment and facilities, third parties) and the corresponding funding to carry out those activities at acceptable levels.

The key steps to completing a BIA include:

- Identifying the City's critical services;
- Identifying the impacts of a disruption (i.e. financial, reputational, legal, regulatory, strategic);
- Considering impacts over time and determining the Maximum Tolerable Period of Disruption ("MTPD"), which represents the time it takes for an adverse impact of not delivering a service or performing an activity to become unacceptable;
- Identifying RTO's and RPO's (which become part of a Disaster Recovery Plan);
- Identifying internal and external activity dependencies (the identification of external dependencies is critical as the unpreparedness of an external party can significantly impact the City's ability to recover critical business processes in an acceptable period, despite all internal dependencies being properly addressed); and
- Communicating and seeking approval of the final documented BIA.

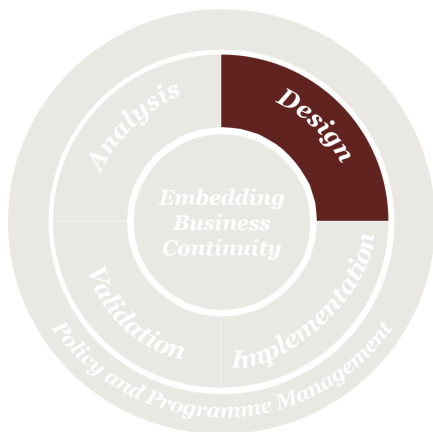
In the BIA workshops (Section 4.2), Directors identified their MTPD based on the time when the impact of a disruption would have a medium level impact (please refer to Appendix 2). Typical resource requirements to sustain or resume business operations include people, information and data, buildings and associated utilities, equipment, information and communication technology systems, finance, and

partners/suppliers. BIAs should be reviewed to identify any gaps where these resource requirements are not being met.

Based on the BIA workshops held and interviews/discussions with project participants, we understand that currently there is a risk that Information Technology (IT) requirements to support continued delivery of essential services may not be in place. IT is currently working on documenting a Catalogue of Services and working with the business lines to understand their needs in terms of RTO's and RPO's. IT is also working on creating Disaster Recovery Plans and developing an IT Business Continuity Roadmap for critical applications. Once the BIA is completed and documented it should be validated by the Director of IT to ensure that IT requirements are accurate and feasible. This will help ensure that recovery options are put in place so that IT systems can be recovered in line with the expectations for recovery established within the BCP's. Recovery options for systems should be based upon an assessment of the impact of loss of system availability and the cost of recovery.

In November of 2016, IT worked with the business lines and identified ten web applications as being essential and required to run in the event of a power outage at City Hall. Administration developed plans to install a generator in City Hall and an uninterrupted power supply in the data center to make the IT infrastructure resilient to a power outage at City Hall. The uninterrupted power supply was installed in late 2017. This is an example of an action already undertaken by the Administration that supports Business Continuity.

### **5.3 Design - BCP Development, Documentation and Maintenance**



Activities in the *Design* phase aim to identify and select appropriate tactics to determine how continuity and recovery from disruptive events will be achieved. As part of this project, workshops were held and initial templates provided to support the Administration with its BCP's. These templates were then modified and tailored by the Director of Corporate Risk to best suit the City's needs.

Recommendations #12 to #16 represent the first steps in the "Creation of the BCMS" tier and certain of these efforts, in particular related to BCPs, have already begun. The implementation of these recommendations will ensure that the City develops BCPs that consider all required resources, are documented and shared in a consistent manner, and are kept current.

Typically, the outputs of the BIA processes are discussed during the *Design* phase to uncover possible strategies regarding the loss of technology and data, personnel, third party providers, and facilities or

equipment. Recovery strategies are also discussed during the *Policy and Program Management* phase and are connected to the Business Continuity Objectives developed during that phase. It is important to develop recovery strategies because they:

- Protect the viability of the City;
- Help to plan for the recovery of operations;
- Identify areas for additional investment to increase operational resiliency;
- Reduce or mitigate exposures, confusion, and chaos;
- Position the City to respond to a disruption; and
- Ensure employees understand how the City plans to recover from a disruption.

Recovery strategies should be put into place based upon priorities (e.g. timing and impact to the City). Recovery strategies developed for one critical area at the City can often be leveraged for other critical areas. Costs of individual recovery strategies will vary based on the recovery strategy selected and the recovery time required.

In order for a recovery strategy to be viable, it needs to fit within the Administration's overall expectation for the restoration of critical services, and the benefits of the strategy must outweigh the cost or risk of not having a strategy in place (as identified through the analysis of disruption impacts in the BIA document). Recovery strategies take into account tolerance for downtime, technical feasibility, resource requirements, and cost effectiveness.

The City could adopt one of three basic recovery strategies in each area:

1. Devise an alternative means of delivering the service internally;
2. Arrange for a third party to provide the service on behalf of the City; or
3. "Do nothing" and wait until the disruptive incident is over to resume service.

Consideration needs to be given to determining if the City's critical third party service providers have a viable BCMS. We noted that 58% of respondents to the Continuity Insights 2016 benchmark survey<sup>[3]</sup> indicated that they require their mission critical third party service providers to provide evidence that they have a viable BCMS in place. If the City relies on third party service providers and the providers do not have their own BCPs, then there is a risk that the City will fail to execute its BCPs effectively despite all internal resources being aligned appropriately.

Documented BCP's should be developed to guide the organization on how to respond following a disruptive incident/event and how to recover to a pre-defined acceptable level of activity/service. The BCPs should also include stand-down procedures on how to return back to normal, once the disruptive incident is resolved. Our methodology supports developing BCPs that are lean and concise by focusing on critical information only. BCPs are not meant to be process documents and need to be written under the assumption that teams participate in Business Continuity Exercises (Section 5.4) prior to a disruption.

BCP's need to be concise and simple to use as their purpose is to provide direction in a time of high stress and pressure. Each BCP needs to have pertinent information, but not granular detail, so that it can be adapted to any situation (predictable or unpredictable) that arises. BCP's that are too detailed are often not followed in an emergency because they are too specific (and therefore too time consuming to enact) and not flexible enough to cope with the real-life situation (and therefore add unnecessary complexity). Straightforward, concise plans have the added benefit of being easier and less costly to maintain.

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[3] 2016 Continuity Insights and KPMG LLP Global Business Continuity Management (BCM) Program Benchmarking Study. The study compiles responses to questions related to business continuity management from approximately 400 professionals including ones from government organizations.



### 5.3.1 Development of Business Continuity Plans

The key question to ask and answer in the development of each BCP is: *What are the immediate key steps that would need to take place in the event of a disruption and who will be in charge of executing those steps?* The BCP is meant to outline actions needed to meet recovery time targets. These targets are set at the point at which the first impact category turns medium so as to prevent the disruption from reaching a high level of impact (refer to Appendix 2 for Impact Framework Categories). Each BCP should contain defined roles and responsibilities, activation procedures and details to manage the immediate consequences of a disruption in the event of technology loss, mass absenteeism, critical third party supplier loss and facility inaccessibility.

The activation procedures should include communication procedures. This information should be included in the overall BCMS documentation as well as in the BCP. Communication procedures establish appropriate internal and external communications protocols regarding what, when and with whom to communicate. At the time of the audit, the City had yet to establish Business Continuity communication protocols. However, the City does have an established protocol for communication with the public for other matters, which potentially could be linked into the BCMS. The Media Relations Division is responsible for drafting media communication and Service Saskatoon is responsible for communicating the messages to the public on the City's website system. The City uses the "notifynow" targeted mass notification system to send emergency alerts and information to staff and citizens.

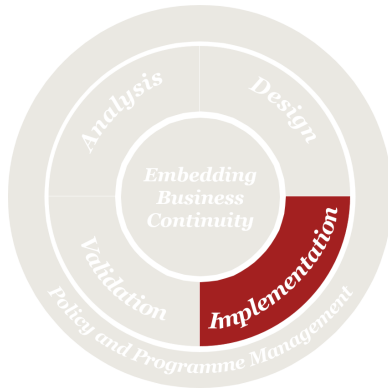
Consideration should be given to establish procedures for expedited approval of expenditures during or following a business disruption. Delays in procuring resources could have negative safety or financial impacts.

### 5.3.2 Maintenance of Business Continuity Plans

Once the BCP's are documented, it is vital that the information in the plans remains current. Outdated plans will not support an effective response to a disruption. It is good practice to review each BCP's parameters (e.g. assumptions, resources, responsibilities) on a regular basis, or as and when any significant changes (e.g. platform/hardware changes, system/application changes, staff changes) affecting the BCP occur.

Formal triggers for BCP reviews should be established, such as an annual review cycle, as well as ad-hoc triggers such as changes noted in exercise lessons learned or changes in staff or organizational structure. A version control process is central to ensure that current versions are accessible by staff and have been shared with the Business Continuity Committee.

## 5.4 Implementation - Testing and Exercising



In the *Implementation* phase, BCP's are being tested or "exercised" to assess the adequacy of the plan through exercises based on realistic scenarios. BCP's are then updated as appropriate based on the outcomes of these exercises. Recommendation #17 is designed to ensure that City staff have the capabilities and confidence to action the BCP's in the event of an actual disruption.

Types of exercise activities range from simple to complex and include tests, notification drills, table top exercises or full scale exercises. These different types of exercises are defined in the Glossary. It is important to note that the resource costs vary by type of exercise, as do the benefits. For example, a full scale exercise will cost more than a notification drill, however it will provide the most benefit to staff to play out a real life scenario and may significantly enhance employees' capability to respond.

At the time of the audit, the City was still in the process of developing and documenting BCPs, therefore it had yet to develop processes and procedures to exercise and test plans. Once the City has developed and documented the BCP's for identified critical services and functions, the BCPs then need to be exercised.

The goal of exercising is that all staff will know how to function during a disruption, what business priorities they should focus on, and exactly what they should do to maintain the City's commitment to provide services and ultimately to protect its reputation. Exercising also identifies limitations of the BCP and whether specific RTO's and RPO's were achieved.

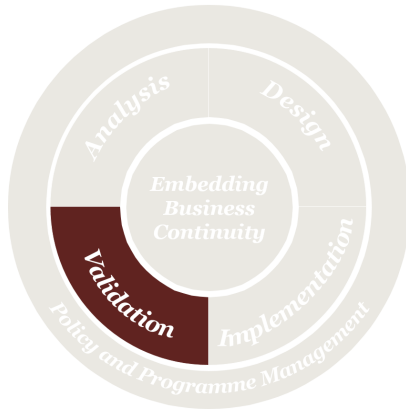
Without sufficient exercising, there is a risk that key staff may not fully understand their roles and responsibilities when the BCP is invoked and that personnel may adversely react during a business disruption. BCPs should be exercised on an annual basis, or more frequently if desired, to ensure that each BCP supports an effective response.

Resourcing implications for exercising need to be considered when determining which type of exercise to conduct. All exercise types will require time from the Business Continuity Stewards and time from the applicable staff to coordinate and participate in the exercise, as well as the Business Continuity Stewards' time to document the results of the activities and follow-up on any identified gaps.

Exercising through a wide-range of disruption types and degrees of complexity will help identify areas for improvement. Exercising should include validation of interdependencies (i.e. IT, Facilities) or external party requirements.

In April of 2017, EMO requested the Leadership Team (now the Administrative Leadership Team) to approve the development and implementation of a corporate 3-year emergency exercise schedule that is intended to be part of the City's BCMS. The request did not identify specific services or business lines to test over the 3 years as it was intended to approve the occurrence of exercises in general.

## 5.5 Validation - Evaluation and Improvement



The *Validation* phase activities include monitoring and reviewing the BCMS at pre-agreed intervals to confirm that it is meeting the City's Business Continuity Objectives, as well as seeking continuous improvement opportunities. Recommendations #18 to #23 are designed to ensure that the BCMS is meeting the objectives in the Business Continuity Policy and that BCPs' in place are effective.

The City first needs to decide what is to be measured and monitored. It will then need to determine what metrics are required to measure against and how these fit with the Business Continuity Policy and Objectives. Finally, the City will then determine how it will deal with and analyze the results of the measuring and monitoring.

The key activities of the *Validation* phase are as follows :

1. Post-incident reviews are conducted (lessons learned) and corrective actions are taken when nonconformity is identified;
2. Monitoring performance and reviews are undertaken by the Administration and, if desired, via internal audits; and
3. Opportunities for continuous improvement of the Business Continuity Program are identified and pursued.

### 5.5.1 Post-Incident Reviews (Recommendations #18 and #19)

The City should track and follow-up on corrective actions identified in post-incident assessments and performance evaluations. Without a follow-up procedure, there is a risk that corrective actions remain unresolved and BCP's are ineffective.

### 5.5.2 Monitoring Performance (Recommendations #20, #21, and #22)

The Administration, with the assistance of internal audits if desired, should monitor performance and conduct reviews at regular intervals. The outputs should primarily look for improvements in risks, adequacy of available resources, and any budgetary requirements. Reviews should include determining if corrective actions have been taken on previously identified incidents of nonconformity. Review results should be communicated to relevant stakeholders.

Processes should be in place to verify annually that requirements of the BCMS are addressed in a way that is aligned with current business needs and service levels.

The City should conduct independent reviews at planned intervals to provide information on where the BCMS conforms to the City's own requirements for its BCMS and/or requirements of ISO 22301:2012. A common practice is for independent reviews to be conducted every three years.

### 5.5.3 Continuous Improvement (Recommendation #23)

An important part of continuous improvement is ensuring that there is a process in place to capture lessons learned following a business disruption and tracking those lessons learned action items through to implementation. Any reviews conducted should incorporate opportunities for continuous improvement in order to enhance BCP's and/or the overall Business Continuity Program.

## 5.6 Embedding - Awareness and Training



The *Embedding Business Continuity* phase is the ongoing activity resulting from the *Policy and Program Management* phase. It seeks to integrate Business Continuity awareness and practice into day-to-day business activities and the City's organizational culture. Recommendations #24 to #26 are designed to facilitate that integration and awareness.

Awareness is raised through communication of the existence of, and importance of, the BCMS. For a new BCMS, it is best to start with those individuals who are part of the response team and then move to City-wide general awareness. The City could use their existing events and communication channels (i.e. intranet and posters) to provide information about the overall Business Continuity Program and its benefits to the City.

It is important to provide appropriate and adequate training and learning opportunities to ensure staff have the necessary competencies and skills based on their roles in Business Continuity.

A goal for this phase is to integrate Business Continuity into project management/change management practices such that the City evaluates Business Continuity needs during the planning stages of each of its projects and then that BCPs continue to be updated with relevant changes on a frequent basis.

# Appendix 1: Recommendations

Note that the recommendations that follow are presented in order of the “Tier” to which they belong, in order to provide prioritization. Note that in order to achieve the outcome of the 26 recommendations taken as a whole, executive sponsorship from the City will be required in order to ensure that proper collaboration occurs across the various departments and divisions and that Business Continuity receives dedicated resourcing (see recommendation #9 below for further detail). The importance of collaboration and dedicated resourcing to the success of the Business Continuity function cannot be understated.

<b>Lifecycle Phase &amp; Tier</b>	<b>Recommendations</b>
<b>Section 5.2 - “Analysis” Phase</b>	1 (Pages 22 and 23). The Administration should work with Directors to complete BIA documentation. BIAs should then be reviewed and approved by the appropriate levels of Administration.
<b>ALSO</b> <b>“Immediate Ongoing Actions” Tier</b>	2 (Pages 22 and 23). The BIA documentation should then be leveraged to build the Continuity Resource Requirements (CRR) list. The CRR list could then be reported to the Administrative Leadership Team, with potential required funding being identified.
	3 (Pages 22 and 23). The Administration should establish a process to ensure BIA information is updated on a regularly scheduled basis.
<b>Section 5.1 - “Policy and Program Management” Phase</b>	4 (Page 19). The Administration should develop a BCMS Charter to define the overall accountability and responsibility for BCMS. The Administration could consider presenting the Charter to the Administrative Leadership Team and to the Standing Policy Committee on Finance to receive as information.
<b>ALSO</b> <b>“Follow-Up Planning and Preparation Actions” Tier</b>	5 (Page 19). A BCMS Sponsor should be appointed to ensure leadership commitment to BCM and the availability of sufficient resources for the BCMS. The City Manager, for example, could be an appropriate choice for BCMS Sponsor. Alternatives for the BCMS Sponsor role could be members of the Administrative Leadership Team.
	6 (Page 19). A Business Continuity Committee should be established, which will have overall responsibility for Business Continuity coordination, development and maintenance. Members of this Committee could include the BCMS Sponsor, General Managers, Fire Chief, Director of Emergency Planning, Director of Corporate Risk, and Director of Information Technology. The establishment of a Business Continuity Committee could be modelled after the Corporate Risk Committee and its terms of reference. The Business Continuity Committee should meet at least two times per year, with more frequent meetings likely being required initially.
	7 (Page 20). The Administration should develop Business Continuity Policies. In developing the policies, consideration should be given to whether the policies are compatible with the strategic direction of the City and whether the policies clearly articulate who is responsible for the development, maintenance and testing of the City-wide BCP. The development of policy in this area could be leveraged from the “Corporate Governance Risk Based Management” Policy C02-040. The Business Continuity Committee should approve the Business Continuity Policies.

<b>Lifecycle Phase &amp; Tier</b>	<b>Recommendations</b>
<b>Section 5.1 - “Policy and Program Management” Phase</b>	8 (Page 20). Once the Business Continuity Charter and Business Continuity Policies have been approved, the BCMS Sponsor and the Business Continuity Committee should develop Business Continuity Objectives aligned with those documents. Subsequent to completion of the Business Continuity Objectives, the City would then consider reporting the Objectives to the SPC on Finance for information.
<b>ALSO</b> <b>“Creation of BCMS” Tier</b>	9 (Page 21). The Administration should seek approval for funding needs identified to support the BCMS, including FTEs as well as any technology needs. Consideration should also be given to future needs with respect to the operation and ongoing maintenance of the BCMS. As outlined in Section 5.1.7, typically 1 to 2 FTEs are required to ensure proper operation and maintenance of a fully functioning BCMS. From this point forward in the recommendations, references will be made to the BCMS Coordinator as being the individual responsible for the BCMS.
	10 (Page 21). Business Continuity Stewards should be identified and designated in each business unit. The roles and responsibilities of the Business Continuity Stewards should be documented and communicated to those individuals.
	11 (Page 21). The training needs of individuals involved in the establishment and/or maintenance of the BCMS, including the Business Continuity Stewards, should be assessed at regular intervals and a process should be developed to provide training to the Business Continuity Stewards.
<b>Section 5.3 - “Developing, Documenting &amp; Maintaining BCP’s” Stage</b>	12 (Pages 23 to 25). As work progresses on the development and documentation of the BCPs, we recommend that recovery strategies are thoroughly assessed and available alternatives are priced before selecting the final recovery strategy and developing implementation procedures.
<b>ALSO</b> <b>“Creation of BCMS” Tier</b>	13 (Pages 23 to 25). BCPs should be communicated to all personnel with Business Continuity response roles and each plan should also be communicated and coordinated with the Director of Emergency Planning. Communication procedures and points of contact should be included in the overall BCMS documentation as well as in the individual BCP documents.
	14 (Pages 23 to 25). Procedures should be established for expedited approval of expenditures during or following a business disruption. Consideration should be given to creating separate accounting procedures to track and document time and costs during and immediately following a disruption.
	15 (Pages 23 to 25). A formal protocol for Business Continuity Plan maintenance should be developed and implemented, along with a change management policy for documentation and approval of changes. This should include version control of the BCP documents to track changes to the BCPs.
	16 (Page 23 to 25). The BCMS Coordinator, in coordination with Business Continuity Stewards, should provide a BCP status report to the Business Continuity Committee on a regular (i.e. annual) basis, in order to create transparency with respect to the frequency with which BCP’s have been updated.

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**Section 5.4 -  
Implementing  
- Testing and  
Exercising  
Stage**

17 (Pages 26 and 27). A City-wide process to ensure that BCPs are exercised on a regular basis should be developed. These exercises must be aligned with existing emergency response exercises. The BCMS Coordinator, with support from the Business Continuity Stewards, would develop procedures to test and exercise BCPs.

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**and**

**Section 5.5 -  
Validation -  
Evaluation &  
Improvement  
Stage**

18 (Page 27). A process should be developed for conducting and documenting post-incident assessments, including developing a template for post-incident reviews and post-exercise reviews. This will ensure consistency in the information collected in the review process and support Administration's reporting to the Business Continuity Committee.

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**ALSO**

**"Creation of  
BCMS" Tier**

19 (Page 27). A process should be developed to track and follow-up on corrective actions identified in post-incident assessments and, where applicable, to incorporate this into performance evaluations. This process should also include the communication of these corrective actions to others for purposes of continuous improvement.

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20 (Page 27). A process to verify and confirm annually that each BCP is aligned to current business needs and service levels should be developed. A standard verification/sign-off process for the Business Continuity Stewards with respect to the BCP(s) that they are responsible for should be incorporated into this process.

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21 (Page 27). A process to coordinate annually with the Director of Corporate Risk should be developed to ensure that BCMS is included in the annual risk assessment process and the annual emergency response review process.

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22 (Page 27). A process to have an independent review conducted at planned intervals should be developed to provide the BCMS Sponsor and the Business Continuity Committee with information on whether the City's BCMS is conforming to its policies and procedures. Reviews conducted should include identification of opportunities for continuous improvement.

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23 (Page 28). A process to collect, track and report information on Business Continuity performance should be developed. The Administration could consider reporting trends in the following areas: non-conformities and effectiveness of corrective actions, monitoring and measurement of evaluation results, and results of independent reviews.

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**Section 5.6 -  
Embedding -  
Awareness &  
Training  
Phase**

24 (Page 28). A process should be established to raise awareness through communication, starting with those individuals who are part of the response team then moving towards general City-wide awareness.

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**ALSO**

**"Creation of  
BCMS" Tier**

25 (Page 28). A process should be established to provide appropriate and adequate training and learning opportunities to ensure staff who have Business Continuity responsibilities have the necessary competencies and skills.

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26 (Page 28). A process should be established to integrate Business Continuity into project and change management practices.

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# Appendix 2: Impact Framework Categories

	<b>Health and Safety</b>	<b>Regulatory/Legal /Environmental</b>	<b>Operational</b>	<b>Financial</b>	<b>Reputational</b>
<b>High</b>	Single or multiple fatality or serious injuries to one or more people OR extreme personnel safety risk (death, disability, and/or dismemberment).	Significant fines and/or prosecution OR significant contractual impact (including union agreements).	Prolonged impact on delivery of one or more services to citizens or within the City OR loss of multiple staff via strike, an accident or resignations, loss of Administrative Leadership Team member(s)..	Increased costs or loss of revenue in excess of \$1 million.	Serious public or media attention beyond Saskatoon, major long term and/or widespread impact on external stakeholder relationships.
<b>Medium</b>	Staff member(s) is/are seriously hurt or significant lost-time incident.	Major breach of regulation, significant fines, potential loss of future funding OR major contractual impact (including union agreements).	Moderate yet short lived impact on delivery of one or more services to citizens or within the City OR multiple staff absent or on strike within one area.	Increased costs or loss of revenue of between \$250,000 and \$1 million.	Short term local adverse media or public attention, minimal impact on external stakeholder relationships.
<b>Low</b>	Staff at one site or limited sites affected by the lost time incident, short in duration, may or may not require hospital attention.	Minor legal issues, non-compliance and breaches of regulation OR minor breach of contracts (including union agreements).	Minor, short term impact on delivery of one or more services to citizens or within the City.	Increased costs or loss of revenue less than \$250,000.	Some adverse media attention or heightened concern by local community, minimal impact on long term citizen satisfaction.