

Community Services Report to  
Emergency Management Committee  
2018 November 07

ISC: UNRESTRICTED  
EM2018-1277

## **2018 Disaster Risk Assessment and Business Impact Analysis**

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### **EXECUTIVE SUMMARY**

The 2018 Disaster Risk Assessment, which quantifies and qualifies disaster risk in Calgary, identifies risks of special concern in the city and will be used to inform disaster risk management projects in the 2019-2022 business cycle. This assessment will be released to the Corporation and agency members by the end of 2018, and a modified version will be released to the public via a website.

The associated 2018 Business Impact Analysis is a biennial review of the Corporation's business continuity readiness, conducted by analyzing the business requirements of all services to determine areas of resilience and vulnerability. The results will inform corporate business continuity planning activities in the 2019-2022 business cycle.

#### **ADMINISTRATION RECOMMENDATION:**

The Emergency Management Committee recommends that Council receive this report for information.

### **PREVIOUS COUNCIL DIRECTION / POLICY**

This is a new report being submitted as an update on the risk landscape in Calgary. The City of Calgary Emergency Management Bylaw 25M2002, Section 6 (2) states: "The Director shall, coordinate all emergency services and other resources used in an emergency." This report informs the mitigation and preparation efforts in order to respond to such emergencies.

### **BACKGROUND**

Effective emergency management requires not only the capability to address the consequences of disasters, but also a strong focus on managing disaster risk to reduce the probability and impact of potential events. To that end, the Calgary Emergency Management Agency (CEMA) coordinates periodic city-wide disaster risk assessments in order to understand Calgary's disaster risk environment, share disaster risk information with Calgarians, and prioritize activities towards reducing disaster risk.

CEMA has previously conducted a Hazard Identification and Risk Assessment as a means to describe disaster risk in Calgary, typically by conducting a thorough review of literature and soliciting input from the Agency as a whole. While this approach iteratively improved from 2012 to 2016, the 2018 version has been redesigned to be more comprehensive and is now entitled the Disaster Risk Assessment. The rationale behind this new format was to align the process to ISO31000 risk management processes and emerging industry standards, resulting in an increase to the rigor of the assessment so it could better inform disaster risk management projects within the Corporation and Agency. The final product represents the most comprehensive project to quantify and qualify disaster risk in Calgary, and will result in numerous publications to the stakeholders who play a role in managing disaster risk in Calgary, including the Corporation, Agency, and public. The public version of the report will take the form of a website, the Disaster Risk Explorer, which will allow citizens and businesses to explore disaster risk in Calgary and better understand their role in managing it.

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While the Disaster Risk Assessment is a foundational document for establishing disaster risks in Calgary, CEMA's associated corporate business continuity program is one means by which disaster risk is managed within the Corporation, by supporting the continued provision of City services during business interruptions. Administration Policy GN-039 'Business Continuity Planning' establishes a requirement for CEMA to assess and report on the status of business continuity planning in the Corporation, and the biennial corporate Business Impact Analysis represents the best method for assessing this status, as it analyzes the resilience and vulnerability of business requirements for all City services. A high level overview of this analysis is provided in the presentation accompanying this report, and detailed results are being provided to business units through the Business Continuity Coordinator network.

### **INVESTIGATION: ALTERNATIVES AND ANALYSIS**

The 2018 Disaster Risk Assessment is a sizeable change in the way The City assesses disaster risk, a change that is necessary to further progress disaster risk management in the Corporation and throughout the city. Given the high levels of stakeholder and expert engagement in the new process, the results can be used within the Corporation, across the Agency, by private enterprises, and by individual citizens.

The 2018 Business Impact Analysis is an update on a recurring biennial process. It is important to maintain this process given the key performance indicators it produces for corporate business continuity planning, and the data it contributes for business continuity activities.

### **Stakeholder Engagement, Research and Communication**

The Disaster Risk Assessment was a highly collaborative project, with 65 total hazards being assessed by over 25 hazard-specific subject matter experts including: Environment and Climate Change Canada, Critical Infrastructure owners and operators, internal business units, and the Calgary Police Service. Additionally, the Disaster Risk Assessment was informed by consultation with risk experts including disaster researchers, academics, risk managers, and emergency management professionals.

The 2018 Business Impact Analysis was also highly collaborative, as it involved every business unit in the Corporation assessing the resilience of their business requirements and submitting the results to CEMA for analysis.

### **Strategic Alignment**

#### Council Priority

CEMA's work on Disaster Risk Management supports Council's Priority to provide *A city of inspiring neighbourhoods*.

#### Corporate Priority

The Emergency Management & Business Continuity service line for One Calgary contributes to The City's resilience by understanding, informing, and reducing disaster risk, while empowering citizens to engage in emergency preparedness activities at home, work, and their community.

This work supports the Corporation's Sustainability Direction 2020 objective *Calgary, its communities and neighbourhoods are safe, resilient and supportive*.

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### **Comprehensive Emergency Management Model**

The comprehensive emergency management model is the model used by the Corporation to manage disaster risk and disaster consequence. Both the Disaster Risk Assessment and Business Impact Analysis are integral parts of this model, and contribute to a whole continuum of emergency management.

### **Sendai Framework for Disaster Risk Reduction**

The Sendai Framework for Disaster Risk Reduction is a United Nations strategy and international best practice for reducing disaster risk. The Canadian federal government is a signatory on this framework, and both the Disaster Risk Assessment and Business Impact Analysis align to the outcomes and action items prescribed within.

### **100 Resilient Cities**

The Disaster Risk Assessment and Business Impact Analysis both align to the outcomes of Calgary's membership with the 100 Resilient Cities initiative. The Disaster Risk Assessment informs what shocks are of acute concern within Calgary, and the Business Impact Analysis is a tool for increasing resilience of City services.

### **Corporate Risk Register**

The corporate risk register continues to identify business interruptions as a high risk to the Corporation. The Disaster Risk Assessment will serve to inform City services of disasters of concern, and the Business Impact Analysis analyzes the Corporation's largest vulnerabilities and provides a foundation for business continuity strategies.

## **Social, Environmental, Economic (External)**

The Disaster Risk Assessment is the foundational document used to manage disaster risk in Calgary, and should be utilized by stakeholders to reduce the consequence of disasters on the social, economic, and environmental well-being of the city.

The Business Impact Analysis is ultimately used to reduce the vulnerability of City services to disruptions and interruptions, ensuring essential City functions can be maintained during emergencies and disasters. The continued provision of these services supports the social, economic, and environmental recovery of impacted systems by ensuring City services are available to support disaster response and recovery.

## **Financial Capacity**

The Disaster Risk Assessment and Business Impact Analysis are conducted within operating budgets of CEMA and the business units and Agency members who collaborated on the projects. Both items provide data and intelligence as to where mitigation and preparedness resources should be focused in the future, as a means to increase Calgary's resilience to disasters and emergencies.

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### ***Current and Future Operating Budget:***

The risks and vulnerabilities in these reports should be utilized by business units to enhance their business continuity planning. While this activity is typically already resourced by business units, a risk or vulnerability of significant implication could require intensified mitigation efforts, and associated operating budget, to ensure appropriate preparedness. This would be conducted within the budget planning of the affected business unit.

### ***Current and Future Capital Budget:***

The process established by Infrastructure Calgary to inform the investment recommendations for 2019-2022 One Calgary service plan included a Critical Infrastructure criteria that had been established through guidance from the Disaster Risk Assessment, Business Impact Analysis, and Resilience Strategy.

### **Risk Assessment**

Disaster risk is based on consequence, risk trend, and likelihood. The Disaster Risk Assessment identified 13 high priority disaster-types in Calgary. High priority disasters occur when Calgary is overly exposed and vulnerable against the probability and impact of a particular disaster type.

The Business Impact Analysis identifies the common and unique vulnerabilities within the Corporation that require business continuity attention to ensure the continued provision of services during interruptions wrought by emergencies and disasters. This analysis is conducted by assessing business requirements of all services, the current status of their backup plans, and the relative importance of each requirement.

#### **REASON(S) FOR RECOMMENDATION(S):**

The Disaster Risk Assessment and Business Impact Analysis are two principal documents for allowing stakeholders to manage disaster risk in both the community and Corporation.

#### **ATTACHMENT(S)**

None