

Status Update on the IT Disaster Recovery Program

Date: November 25, 2024

To: Audit Committee

From: Chief Technology Officer, Chief Information Security Officer, and the Executive Director, Toronto Emergency Management

Wards: All

REASON FOR CONFIDENTIAL INFORMATION

The attachment to this report involves the security of property belonging to the City of Toronto.

SUMMARY

This report provides an update to the Audit Committee on the City's Enterprise IT Disaster Recovery Program, as directed by [2023.AU3.7](#). This report provides an overview of progress made by the City of Toronto's Technology Services Enterprise Disaster Recovery Program, including business continuity and cyber major incident management, as well as the status of IT disaster recovery plans from City of Toronto divisions, agencies, and corporations.

RECOMMENDATIONS

The Chief Technology Officer, the Chief Information Security Officer and the Executive Director, Toronto Emergency Management recommend that:

1. City Council direct that the Confidential Attachment 1 to this report remain confidential in its entirety, as it involves the security of property of the City.

FINANCIAL IMPACT

The status update contained in this report does not have any financial impact. However, the implementation of the Enterprise IT Disaster Recovery Program referred to in this report has financial implications. Current costs are included in the 2025 - 2034 Capital

Budget and Plan Submission for Technology Services Division. Any future costs related to the program will be included in future budget submissions for impacted divisions.

The Chief Financial Officer and Treasurer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

On December 1, 2023, the Audit Committee requested the Chief Technology Officer, in co-ordination with the Chief Information Security Officer and the Executive Director, Toronto Emergency Management to report to the Audit Committee in the third quarter of 2024 on the status and progress of the Information Technology Disaster Recovery Plan from each City of Toronto division, agency and corporation; the status update should also be reported for the City of Toronto's Corporate Technology Services Disaster Recovery Plan, including business continuity and cyber major incident management. This was considered by the City Council on December 13, 2023 under [AU3.7 - Status Update on the Information Technology Disaster Recovery Program](#).

On July 11, 2022, the Audit Committee requested the Chief Technology Officer, in co-ordination with the Chief Information Security Officer and the Executive Director, Toronto Emergency Management to report to the Audit Committee in the third quarter of 2023 on the status of the Information Technology Disaster Recovery Plan from each City of Toronto division, agency and corporation, including the status update for City of Toronto's Corporate Technology Services Disaster Recovery Plan, business continuity, and cyber major incident management. This was considered by the City Council on July 19, 2022 under [AU13.9 - Status Update of the IT Disaster Recovery Plan](#).

On November 2, 2021, the Audit Committee requested the City Manager to report to the Audit Committee with information from each City of Toronto division, agency and corporation on their Information Technology Disaster Recovery Plan should the City's systems, technology, communications, or backups be made unavailable. The Chief Technology Officer was also requested to report to the Audit Committee with an update on the status of City of Toronto's Corporate Technology Services Disaster Recovery Plan, including implementation, testing and a full project plan for any outstanding work under [AU10.8 - Status of Audit Recommendations for the Technology Services Division](#).

These Council motions are anchored on audit report [AU 7.3 - Disaster Recovery Planning for City Computer Facilities](#), which articulates on the City's contingency plans in the event of a disaster disabling City technology services. This audit report was adopted by the City Council on May 26, 2008.

COMMENTS

Section 1: City of Toronto's Enterprise IT Disaster Recovery Program

Technology Services Division (TSD), in collaboration with Toronto Emergency Management (TEM) and the Office of the Chief Information Security Officer (CISO), leads the Enterprise IT Disaster Recovery Program that establishes the City's IT disaster recovery management framework and governance to mobilize a collection of resources to prepare, respond, and recover critical IT services including IT infrastructure, telecommunications, systems, applications, and data at an alternate site following a major disruption or a disaster. Disaster recovery includes the subsequent resumption and restoration of those IT operations.

Program Benefits

The Enterprise IT Disaster Recovery Program is anchored on a strategy developed in 2021 which highlights the goals and priorities of the program, leveraging information from the City's Business Continuity Management Program and Cyber Incident Management. The Enterprise IT Disaster Recovery Program is a critical component in ensuring the City of Toronto's technology resilience in the face of unforeseen events such as major cyber attacks, natural disasters, or system failures.

Below are the key benefits and expected outcomes of a robust disaster recovery plan delivered through the Enterprise IT Disaster Recovery Program:

- Reduced downtime after crises that enables the City of Toronto to continue the delivery of its critical services to the public.
- Data protection as an outcome of the strategies supporting regular backups, data storage at an alternate site, and failover systems.
- Improved public trust and confidence in the City's ability to continue providing services, even in crisis.

The Enterprise IT Disaster Recovery Program was established, in part, based on recommendations made by the Auditor General's Office in 2008 to improve the City's approach to disaster recovery planning and to minimize the negative effects of extended computer service interruptions and maintain critical public services in the event of a disaster. The full implementation of the Enterprise IT Disaster Recovery Program will address the 3 remaining open audit recommendations in Technology Services. It will also enhance the overall risk management in the IT infrastructure and mission-critical applications supporting critical services provided by the City of Toronto.

Progress Update on the Enterprise IT Disaster Recovery Program

The Enterprise IT Disaster Recovery Program is guided by a multi-year implementation roadmap that outlines key phases and milestones to strengthen disaster recovery at the City of Toronto. The program's deliverables are segmented across three phases:

- Preparatory phase - development of guidelines, test plan, and framework

- Phase 1 - technology implementation and program support
- Phase 2 - expansion of disaster recovery implementation

Details on the progress of the Enterprise IT Disaster Recovery Program implementation at the City of Toronto is available in *Confidential Attachment 1 - Update on IT Disaster Recovery at the City of Toronto (2024)*.

Integration with Business Continuity & Cyber Incident Management

Understanding the importance of aligning with business resiliency work led by other City divisions, the Enterprise IT Disaster Recovery Program leverages information and processes already established by Toronto Emergency Management (TEM) via their Business Continuity Management Program and the Office of the Chief Information Security Officer's Cyber Incident Response Plan.

- *Business Continuity Management (BCM) Program Update*

The City's BCM Program ensures that vital City of Toronto services can continue to function during an unplanned disruption and return to business as usual as soon as possible. As part of this program, Business Impact Assessments are carried out by TEM on divisional business processes to identify dependencies on staff, facilities, materials and equipment, and technology. The technology interdependencies help inform the disaster recovery work.

The BCM Program also evaluates a variety of business process impacts and supports City divisions in developing their own Business Continuity Plan with recovery strategies to ensure divisions can maintain or restore services with minimal disruption. An effective plan provides orderly, cost-effective continuity of time-critical processes when a disruption occurs.

The BCM Program is available to all City divisions. While Division Heads are responsible for ensuring appropriate business continuity planning, Toronto Emergency Management facilitates the program and engages with City divisions to support business continuity planning and decision-making.

- *Cyber Incident Response Plan Update*

The City established its Cyber Incident Response Plan in 2022. The Office of the CISO uses this plan to conduct tabletop exercises and cyber incident response walkthroughs with several key stakeholders including Payment Compliance Industry (PCI) support teams, Elections, Technology Services, Emergency Management, and other City critical infrastructure Divisions. In 2024, the Office expanded its exercises to City agencies.

Section 2: City-wide Assessment of IT Disaster Recovery Plans

In 2024, the City gathered input across City divisions, agencies, and corporations on the status of its IT disaster recovery plans to gather input to understand the risk posture of the City in the event of an unforeseen IT disaster.

A. City Divisions

The business impact analysis of City applications and the preliminary architecture solutions assessment are fundamental components of IT disaster recovery planning. The analysis of business applications and technology infrastructure is used to identify where a disaster recovery plan is needed based on application vulnerabilities to prioritize protecting the most critical technology assets of the City of Toronto.

The summary of outcomes from the business impact analysis of applications and architecture solutions assessment at the City of Toronto is available in *Confidential Attachment 1 - Update on IT Disaster Recovery at the City of Toronto (2024)*.

B. Agencies & Corporations

Also in 2024, Technology Services refreshed its 2023 Disaster Recovery questionnaire to 12 agencies and 5 corporations. The questionnaire comprised 24 questions, segmented across 8 sections for a comprehensive view on disaster recovery including business continuity and cyber major incident response.

The sections in the questionnaire include the following:

- Information Technology Disaster Recovery Plan
- Information Systems / Application and Data Recovery
- Foundational IT Core Technology Recovery
- Back-ups
- Disaster Recovery Testing
- IT Disaster Recovery Communication Procedure and Contact Information
- Business Continuity Plan
- Cyber Major Incident Response Plan

The analysis of the collective response received from the agencies and corporations is provided in *Confidential Attachment 1 - Update on IT Disaster Recovery at the City of Toronto (2024)*.

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SIGNATURE

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ATTACHMENTS

Confidential Attachment 1 - Update on IT Disaster Recovery at the City of Toronto (2024 Assessment)