

Digital Preservation Policy

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Digital Preservation Policy

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1.0 Introduction

This policy establishes the City's direction to preserve and provide access to digital records that provide evidence of the decisions, policies, and activities of the City of Toronto and its predecessor municipalities, including archival, permanent, and long-term records.

The City manages information throughout the entire records lifecycle. The City recognizes its digital records as dynamic and extensible, acknowledging that records created by one individual may be used and repurposed by any number of others.

The City of Toronto defines digital preservation as measures required to:

- Ensure records documenting key business functions at the City are identified and retrievable
- Ensure access to digital records regardless of format or software obsolescence
- Maintain consistent and relevant metadata at all stages of the records lifecycle
- Mitigate the risk of data loss, corruption or destruction of digital records

This policy applies to all staff who create and steward digital information, and the divisions responsible for managing this information through its lifecycle. The City's [Information Management Accountability Policy \(IMAP\)](#) provides a foundation for understanding how staff at all levels of government are responsible for management of digital records throughout the information lifecycle.

This policy contributes to the City of Toronto's commitment to fostering a well-run City, which includes the effective and efficient management of City records and information to:

- Improve the City's transparency and accountability;
- Improve accuracy of business intelligence and analytics activities to better inform decision-making;
- Create authoritative records;
- Safeguard the City's records and information from unauthorized use;
- Support access to digital records for greater business efficiency;
- Increase public access to digital records and information;
- Ensure compliance with legislative recordkeeping requirements and regulations;
- Standardize the lifecycle management of digital records to support a culture of collaboration and information-sharing;
- Enable secure and efficient disposition of digital records; and
- Foster a strategic governance approach to manage the development, implementation, and sustainment of digital preservation activities

2.0 Purpose

This policy identifies the necessary processes and stakeholders required to ensure that digital records created by the City of Toronto can be preserved and accessed in accordance with Toronto Municipal Code, Chapter 217, Records, Corporate. In addition, this policy provides for the preservation of non-City digital records that are acquired by Archival Services in accordance with the [Acquisition Policy for the City of Toronto Archives](#), which are deemed to hold value for the historical memory of Toronto.

3.0 Authorities

This policy is issued pursuant to §217-2A of the [City of Toronto Municipal Code Chapter 217, Records, Corporate \(City\)](#); [200-201 City of Toronto Act](#), 2006; and, Section 4.1 of the [Municipal Freedom of Information and Protection of Privacy Act \(MFIPPA\)](#).

This policy must be read in conjunction with other requirements, including but not limited to, policies, standards, and requirements in records management, privacy, security, and accessibility.

The City Clerk has delegated to the Deputy City Clerk, Corporate Information Management Services the authority to issue, amend, and rescind records and information management directives and standards related to this policy.

4.0 Application

This policy and its supporting instruments apply to Divisions and Division Heads as defined in Toronto Municipal Code, Chapter 217, Records, Corporate.

This policy does not apply to Elected Officials, Accountability Officers, or City Agencies and Corporations.

The City of Toronto encourages Agencies and Corporations to review, update to reflect business needs, if necessary, and adopt this policy.

5.0 Scope

Aligned with Toronto Municipal Code, Chapter 217, Records, Corporate, this policy addresses digital records with archival, permanent, and/or long-term retention.

This policy addresses both born-digital and digitized records.

Preservation is applied to records with ongoing access requirements, as determined by records retention scheduling, including archival, long-term, and permanent records.

This policy includes records stored as unstructured, and semi-structured data. This policy may include unstructured and semi-structured records extracted from structured

sources including systems and applications. Records may be stored in document formats, or in emergent formats including email, audio, video, photographic, mixed media, web formats, or code.

There may be requirements to concurrently preserve digital information objects including publications, open data, software applications, and systems that enable access to digital records and store relevant content and preservation metadata.

6.0 Objectives

This policy enables an integrated framework of business processes, strategy, and infrastructure that support the appraisal, storage, and management of digital records deemed reliable, authentic, and integral that effectively capture key business activities of the City of Toronto's government and public service, or that otherwise promote and preserve Toronto's historical memory.

Aligned with the City of Toronto's Digital Preservation Framework and Information Management Framework, this policy's expected outcomes include:

- **Accountable government:** establish a governance body with cross-City representation to share the responsibility for the management of City records with long-term, permanent, and archival retention requirements.
- **Trustworthy government:** identify records of enduring value and manage those records with procedures that maintain authority and trustworthiness.
- **Accessible government:** define the current-state requirements of public and government records users, and determine how those needs can be met by staff resources and technology.
- **Responsible government:** align digital preservation processes with industry best practices with regards to migration, normalization, storage, security, and privacy, to mitigate risk and meet or exceed legislative recordkeeping requirements.
- **Progressive government:** build capacity for a digital preservation repository for archival and permanent records, inclusive of technological infrastructure, staff proficiency, and system interoperability.

7.0 Preservation Principles

7.1 Accessibility

- Digital Preservation choices, technologies, and outcomes should be based on the usability and access requirements of the City's designated community of users. The City defines its designated community in context of:

- The requirements of City staff to conduct divisional business activities and provide services to the citizens of Toronto.
 - The requirements that City staff comply with relevant legislation, including responses to requests submitted under the Municipal Freedom of Information and Protection of Privacy Act (MFIPPA), which support efficient and open access to government information by the public.
 - The requirements of public users who consult records for reference and personal research.
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- The City monitors its technologies and records for hardware, software, and format obsolescence risk.
 - Structured data applications and systems are decommissioned to extract permanent, long-term, or archival records at the end of the data lifecycle.
 - Permanent and archival records stored in high-risk formats should be migrated to preservation formats that ensure continued access.

7.2 Authenticity

- The City preserves the content, context, and provenance of its digital records in alignment with function and retention.
- Preservation strategies and processes are documented to enable consistent application of preservation actions.
- Changes made to records in the process of transfer, acquisition, migration, normalization, and reproduction for access are recorded through preservation metadata.

7.3 Integrity

- Records undergo regular fixity checks, and are maintained in repositories that allow for capture and maintenance of preservation metadata.
- Records are protected against unauthorized access, change, or deletion.

7.4 Rights Management

- The City respects the moral and intellectual property rights of records creators and subjects. Records are reproduced and distributed only if the records are in the public domain, the City holds copyright, or the creator has provided permission.

7.5 Security and Reliability

- The City procures and maintains repositories for record storage that ensure bit-level data integrity, file format sustainability, information security, and privacy protection.
- The City maintains an unbroken chain of custody for digital records throughout the record lifecycle.

8.0 Roles and Responsibilities

8.1 The City Clerk is responsible for the following:

- Leading the corporate development and implementation of digital preservation strategies, policies, standards, procedures, best practices, programs, and systems to promote City transparency, accountability, and the management of City information.
- Enabling Archival Services, Corporate Information Management Services, to obtain sufficient control over the records and associated metadata provided to ensure records can be appraised and preserved over the long-term.
- Ensuring that records targeted for preservation have contextual metadata and authoritative records characteristics that support independent understandability, including access, use, and application by City staff and citizens.
- Ensuring that records of enduring value are preserved against all reasonable contingencies, including organizational changes preservation storage failure, or system failure.
- Developing corporate services to provide advice and guidance to enhance the effective digital preservation of active records and information within Divisions to meet legislative requirements.
- Implementing approaches to training and education that increase awareness and knowledge of digital preservation requirements for active, semi-active, and archival records.

8.2 The Chief Technology Officer (CTO) is responsible for the following:

- Integrating information management requirements, including those for digital preservation, into appropriate technology architectures, policies, standards and implementation activities, in accordance with the requirements of Municipal Code Chapter 217, Corporate Records.
- Implementing and enabling technology solutions that meet digital preservation industry best practices, including the provisions listed in this Policy and related City of Toronto digital preservation standards, guidelines and requirements.
- Implementing and enabling technology solutions that meet the requirements of the Ontario Information & Privacy Commissioner's Privacy by Design requirements, and Access by Design requirements.

8.3 The City Archivist is responsible for the following:

- Providing digital preservation-related oversight.
- Preserving and ensuring ongoing access to the City's digital archival records.

- Negotiating for and accepting appropriate records from City Divisions and public donors that fulfill the Archives' acquisition mandate.
- The creation of reproductions, and licensing, certification and reuse of digital archival records.
- Communicating copyright and licensing conditions to City staff and public users in alignment with digital rights management.
- Developing and maintaining procedures and best practices for digital preservation of archival record.

8.4 Division Heads are responsible for the following:

- Ensuring compliance with this policy and related digital preservation standards, guidelines and requirements within their Division.
- Ensuring employees are properly trained and have access to learning opportunities and relevant information to increase their awareness and knowledge of digital preservation requirements.
- Establishing an environment of internal controls and sound management practices for the digital preservation of records and sources that are transparent, understood, and supported in the Division.
- Ensuring the appropriate and timely transfer of born digital and digitized records due for archival review.
- Ensuring that digitized records are created in compliance with the [Creating and Managing Digitized Records Standard](#) and [Disposition Authority for the Destruction of Source Records following Digitization](#).
- Ensuring digital and digitized records with long-term retentions are housed in an appropriate corporate repository that ensures the proper maintenance of the records and associated metadata.
- Maintaining the overall quality of both machine-generated and human-generated metadata.

8.5 Managers and employees are responsible for the following:

- Adhering to this policy and related policy instruments within their Division.
- Taking the necessary steps to keep themselves informed of Digital Preservation Policy requirements that relate to their areas of decision-making and availing themselves of training and educational opportunities.
- Ensuring the accuracy, integrity, authenticity, usability, and reliability of metadata for records they create, receive, and/or manage.

8.6 The City Clerk, CTO, Division heads, and City Archivist will:

- Recognize that planning and implementation of digital preservation is a shared responsibility and a collaborative effort.

- Establish a cross-disciplinary governance body that has the authority to mandate digital preservation activities.

9.0 References

9.1 Bylaws and Legislation

- Municipal Freedom of Information and Protection of Privacy Act
- City of Toronto Act, 2006
- City of Toronto Municipal Code Chapter 217, Records (Corporate)
- Accessibility for Ontarians with Disabilities Act (AODA)

9.2 Related policy instruments

- Information Management Framework
- Information Management Accountability Policy
- Acquisition Policy for the City of Toronto Archives
- Creating and Managing Digitized Records Standard
- Disposition Authority – Destruction of Source Records After Digitization
- Privacy Impact Assessment Policy
- Protection of Privacy Policy
- Responsible Recordkeeping Directive
- Cyber Security Policy
- Acceptable Use Policy
- Corporate Information Security Policy
- City of Toronto Corporate Accessibility Policy

9.3 International standards

- OAIS reference model ISO 14721:2012
- ISO 15489 - Information and documentation, records management
- ISO/TR 18492:2005(en) - Long-term preservation of electronic document-based information
- Trusted Repository Audit Checklist (TRAC)
- Library and Archives Canada Strategy for a Digital Preservation Program
- Digital Preservation Policy, National Archives of Australia

10.0 Enquiries

10.1 For interpretation of any aspect of this policy, contact infomgmt@toronto.ca.

11.0 Approvals

Version Number	Approver / Endorser	City Division	Date
1.0	Kristie Pratt	City Clerk's Office	2021-04-22

12.0 Revision History

Version Number	Version Date	Comments	Author / Contributor
0.1	2020-05-20	Initial draft	Bronwyn Gray
1.0	2021-04-22	Final draft approved	

Version Number	Reviewer
0.1	Corporate Information Management Services
0.1	Technology Services Division

13.0 Glossary

Acquisition	The activity of transferring physical custody and legal ownership of archival records to Archival Services by means of donation or purchase of non-City records, or transfer of inactive records from municipal divisions through the disposition process.
Active Preservation	The process of monitoring and maintaining records in active storage, including shared drives, cloud storage, or EDRMS to ensure ongoing accessibility of records.
Active Record	A record that is used by a business division on an ongoing basis, and is maintained in an active storage repository to facilitate access and reuse.
Appraisal	The process of determining the value and thus the disposition of records based on a consideration of their administrative, legal, fiscal implications, and archival value.
Archival Records	Records designated by the City Archivist that warrant continued preservation.

Archival Value	The evidential value and informational value of records, which are determined during appraisal, and justify their preservation as archival records.
Authentication	A mechanism which attempts to establish the authenticity of digital materials at a particular point in time.
Authenticity	The record is what it purports to be. In the case of electronic records, it refers to the trustworthiness of the electronic record as a record. In the case of "born digital" and digitised materials, it refers to the fact that whatever is being cited is the same as it was when it was first created unless the accompanying metadata indicates any changes.
Authoritative Record	A record possessing reliability, authenticity, usability, and integrity.
Authoritative Source	A recognized set of trusted and reliable information and data managed under the custodianship of an organizational unit.
Authorized Users	All individuals who have been granted access to the City's Information Technology Assets. This includes, but is not limited to, employees, consultants, contractors, subcontractors, individuals on secondment to the City, students and volunteers at the City of Toronto and Accountability Officers and anyone working or volunteering for or in their Offices subject to Section 3-10 F(5), Chapter 3, Accountability Officers, of the Toronto Municipal Code.
Born-Digital Record	Digital materials which are not intended to have an analogue equivalent, either as the originating source or as a result of conversion to analogue form.
Business Transformation	The process of fundamentally changing the systems, processes, people and technology across a whole business.
City Record	A record created or received in the course of City administration or delivery of City services. Also includes records that were created or received in the course of City of Toronto predecessor municipalities' administration or delivery of City services. These include records created, accumulated, and used by a member of Council in the course of the responsibilities specifically imposed on a member of Council under the City of Toronto Act, 2006.
Copyright	The right vested by law in the author of a document and the author's heirs or assignees to publish or reproduce the document or to authorize publication or reproduction of the document.
Data Loss	The loss of access to authoritative records where the content and context of the record become corrupted or unstable.
Designated Community	An identified group of potential Consumers who should be able to understand a particular set of information. The Designated Community may be composed of multiple user communities.
Digital Information Object	Digital entities that support access to and understanding of records including reference publications, runbooks, web content, software applications, and systems.

Digital Record	Data or information that is fixed in a non-human readable format that is created or received in the course of individual or institutional activity and set aside (preserved) as evidence of that activity for future reference.
Digitization	The action by which a device such as a scanner or camera, is used to convert a Physical Record to a Digitized Record for use in a computer.
Digitized Record	Stored information originally created in analog or obsolete formats that is subsequently converted or migrated to electronic format in order to meet business requirements or facilitate ongoing access.
Disposition	The actions taken with regard to inactive City records as determined by an appraisal pursuant to legislation, regulation, or administrative procedure. Actions include destruction, or designation as archival records, or as permanent records.
Document Format	A standard way that textual information is encoded for storage in a machine-readable file.
File Format	A standard way that information is encoded for storage in a computer file. It tells the computer how to display, print, and process, and save the information. It is dictated by the application program which created the file, and the operating system under which it was created and stored. A particular file format is often indicated by a file name extension containing three or four letters that identify the format.
Fixity	The state of being unchanged or permanent.
Fixity Check	A method for ensuring the integrity of a file and verifying it has not been altered or corrupted. During transfer, an archive may run a fixity check to ensure a transmitted file has not been altered en route. Within the archive, fixity checking is used to ensure that digital files have not been altered or corrupted. It is most often accomplished by computing checksums such as MD5, SHA1 or SHA256 for a file and comparing them to a stored value.
Format Obsolescence	The loss of access to information when software and/or hardware is no longer available to read or decode a specific file format.
Information Package	A logical container composed of optional Content Information and optional associated Preservation Description Information. Associated with this Information Package is Packaging Information used to delimit and identify the Content Information and Package Description information used to facilitate searches for the Content Information.
Integrity	The record is protected against unauthorized alteration.
Legacy Hardware	Physical media that are no longer accessible or are at risk of becoming inaccessible as a result of technological and software obsolescence, media failure, or data loss.
Long-Term Record	A City record that must be maintained by its creating division as an active record for a period of ten years or longer, in accordance with its retention schedule.
Media Failure	The breakdown of hardware or physical media so that information is no longer accessible.
Metadata	Data describing context, content and structure of records and their management through time. Metadata can describe the properties of a

	document and facilitate search, identification, and the management of information.
Migration	The process of moving information from one system to another.
Non-City Records	Records that make a significant contribution to an understanding of the development of the City, its natural and built environment, and the people who lived, worked, or had an impact upon Toronto. These may include records created, accumulated, and used by an individual who is or has been a member of Council, in the course of the individual's personal activities, or political activities, or activities undertaken in relation to "constituency relations.
Normalization	The process of converting a digital record from an at-risk data format to a preservation format in order to ensure its continued accessibility with current technology.
Permanent Record	A City record that must be maintained by its creating division as an active record indefinitely, in accordance with its retention schedule.
Personal Information	Information about an identifiable individual, such as (but not limited to) address, race, religion, gender, family status, employment history, medical history, any identifying number assigned to the individual, personal opinions or views of an individual about another individual, and correspondence of a private or confidential nature from an individual. Information about a person in an official, business or employment capacity is not considered personal.
Preservation Repository	A repository in which records, information and data with archival retention are stored, managed, and accessed through. Records, information, and data are stored and managed as information packages with appropriate preservation metadata, as well as crosswalks to archival descriptive metadata managed in a descriptive database.
Privacy	Privacy is a set of interests and rights that an individual has regarding his/her ability to control the collection, use, disclosure and retention of his/her own personal information that is in the custody or control of a third party (i.e. City of Toronto). Privacy is not an absolute right in all situations. Personal information may be collected, used, disclosed or retained without the consent of individuals where specific legislation permits.
Provenance	The person(s) or office(s) of origin of the records; the person(s), family (families), or corporate body (bodies) that created and/or accumulated and used records in the conduct of personal or business life.
Record	Information however recorded or stored, whether in printed form, on film, by electronic means or otherwise, and includes documents, financial statements, minutes, accounts, correspondence, memoranda, plans, maps, drawings, photographs, and films.
Record Lifecycle	A model of records management and archival science that characterizes the life span of a record as comprising sequential stages: creation or receipt; classification; maintenance and use; disposition through destruction or transfer to an archival institution or agency; description in archival finding aids; preservation; reference and use.

Record Transfer	The process of reassigning custody of and access to records from their creators to Archival Services. May include migration of records from one system to another.
Record-Keeping	A set of procedures by which the records of an organization are created, captured, maintained, and disposed of in accordance with approved records policies, standards and retention schedules. Such a system ensures records can be updated accurately and effectively, made available in a timely manner, accessed only by authorized personnel, where required, and preserved and produced as evidence of business activity.
Reliability	The record is trustworthy as evidence and has the ability to stand for the facts it is about.
Retention Schedule	An authority comprising of a description of a body of records, a retention period for those records and a disposition rule stating whether, at the expiry of the retention period, the records are to be destroyed or preserved by the City Archives.
Rights Management	The preservation and identification of copyright and any other intellectual property rights in digital resources according to access conditions agreed upon by the depositor and/or rights holders.
Security	A set of strategies that prevent unauthorized access to organizational assets including hardware, networks, and information.
Semi-Structured Data	A form of structured data that does not obey the tabular structure of data models associated with relational databases or other forms of data tables, but nonetheless contains tags or other markers to separate semantic elements and enforce hierarchies of records and fields within the data.
Structured Data	Information that is stored according to a pre-defined data model.
Unstructured Data	Information that either does not have a pre-defined data model or is not organized in a pre-defined manner.
Usability	The record is capable of being access by users across time and technological environment.