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RIT Libraries Preservation Policy Version 2

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RIT LIBRARIES DIGITAL PRESERVATION POLICY

Version 2 (Pending)

CONTENTS

1 POLICY STATEMENT

This statement relates digital preservation to the institution's mission and the communities it serves. RIT Libraries, which includes the Wallace Library, the Cary Collection, RIT Archives, and other campus partners such as the Vignelli Center in CIAS, supports a wide variety of special collections, information resources for all disciplines, and historical documents of RIT (including the extensive recording of RIT events and sports). These varied resources continue to increase at a rapid rate, especially with digital and born-digital resources and files (both purchased and those generated in-house). As a result of this continual increase, preservation (by digitizing select analog resources and maintaining select born-digital files) is necessary.

1.1 MISSION & VALUES OF RIT LIBRARIES

Digital preservation is integral to RIT Libraries' over-arching goals and aligns with the RIT Libraries Strategic Plan 2015-2020 objective: V.1.2: Finalize an internal digital preservation plan for TWC and establish a TWC process for housing its preservation files. It also represents RIT Libraries' current mission statement, "advance knowledge, spark creativity, and connect communities" by preserving and making available the products of research and creativity developed by the RIT community.

Preserving and providing access to RIT's digital resources also links to RIT's Strategic Plan 2018-2025. By enabling creative digital re-use and re-packaging of RIT's content, guaranteeing both immediate and future access to RIT-generated scholarship, and increasing our support of the students and faculty at our campuses overseas. In addition, this policy supports the preservation of RIT documents and records under the RIT Archives' care, as identified in RIT's Record Management Policy (http://www.rit.edu/~w-policy/sectionC/C22.html).

1.2 TERMS

The following are the definitions of terms that will be used throughout. For a more extensive list of terms, see the Glossary.

DEFINITION: DIGITAL ARCHIVE

A digital archive is a system for storing digital assets of enduring value and their associated metadata for long term preservation. A digital archive may be a single software or a combination of resources that create a secure storage environment for digital objects.

DEFINITION: DIGITAL ASSETS OF ENDURING VALUE

Digital assets of enduring value are those generated by RIT, created/collected because of their unique link to RIT, created/collected because they enhance RIT's special collections, or acquired in support of RIT's academic curriculum.

DEFINITION: DIGITAL OBJECTS

A digital object consists of metadata, content files, and a mechanism to link the two together. For a more in-depth information, see the California Digital Library (CDL) Guidelines for Digital Objects:

http://www.cdlib.org/services/access_publishing/dsc/contribute/docs/GDO.pdf

DEFINITION: DIGITAL PRESERVATION

Digital preservation is the combination of technical activities, policies, strategies and actions that provide long-term and persistent access to those aspects of a digital resource which must be preserved over time in order for the digital resource to avoid degradation and to remain accessible and meaningful.

DEFINITION: DIGITAL RESOURCES

Digital resources are single digital objects or collections of digital objects that are obtained, created or supported by RIT LIBRARIES for the current and future use of the RIT community, and in many cases for the current and future use of scholars world-wide. Digital resources include objects converted into digital form from existing collections of manuscripts, maps, visual images, and sound files, as well as born-digital materials such as web sites, videos, and data.

1.3 PRESERVATION POLICY AIMS

RIT Libraries is committed to providing ongoing support for the preservation of selected digital resources under its care. Ongoing institutional support for digital preservation entails providing adequate resources in the areas of infrastructure/equipment, staffing, and funding. *The purpose of this policy is to provide a framework and guide for RIT Libraries' work in digital preservation*; this is not a procedural manual.

Goal	Reasons for Action	Consequences of Inaction
Preservation	Prevent deterioration of analog items and obsolescence of digital items	Loss of intellectual content
	Preserve items of historical, artistic or cultural importance to RIT and the region, as well as on a national or international level.	Loss of institutional memory; loss of history; loss of cultural resource; loss of prestige
Access	Ensure long-term access to digital items (immediate access, mid-term access, permanent access)	Less ability to access and use the information; lost time looking for assets; decreased use of assets
	Promote efficient access and ease of use that increases methods and modes of discovering assets	
Scholarship	Ensure availability of materials for research (programs at RIT; outside academic programs)	Inability for students, faculty, alumni and beyond to access and use the information

Ideally, digital preservation decisions are made when materials are acquired, or before the beginning of a digitization project. It is more efficient to address preservation as part of a regular process than performing a "rescue" attempt to save files later on.

For true digital preservation, both master and access copies should be created in the best quality possibly and in an accepted standard file format appropriate for the medium involved for the best guarantee of the file's use in the future. In addition to metadata describing the content of the digital files, metadata storing provenance, legal, contractual, technical, and preservation information is required.

2 SCOPE

This section summarizes the resource groups (e.g. units, departments, or external parties) for which the institution takes responsibility and prioritizes these according to institutional importance. RIT Libraries is responsible for preserving and providing access to selected digital assets of enduring value.

2.1 DIGITAL ASSETS OF ENDURING VALUE

Digital assets of enduring value include but are not limited to

- All electronic student theses and dissertations
- Scholarly materials generated by faculty and staff, and designated for retention
- The digital collections of the RIT Archives
- University records in digital formats as retained by the RIT archivist according to the RIT Records Management Policy (http://www.rit.edu/~w-policy/sectionC/C22.html)
- The digital collections of the Cary Graphic Arts Collection
- Journals, books, and conference proceedings created and maintained by the RIT Open Access Publishing staff, part of the Digital Initiatives and Metadata Services department.

Not all of the digital content created or acquired by RIT Libraries will be preserved. Digital resources of a temporary nature (short-term use) such as documents for electronic reserves or interlibrary loan, will not be preserved, and other resources may not need to be preserved in perpetuity.

2.2 SUPPORT FOR OTHER DIGITAL RESOURCES

2.2.1 RESEARCH DATA AT RIT

In addition to preserving and providing access to selected digital assets of enduring value,   will also provide assistance to faculty, students, and staff in creating data management plans, providing guidance in establishing best practices for organizing and preparing research data, and in identifying appropriate storage and preservation for the data itself, whether through RIT Libraries, RIT, a professional society, or a similar agency. This support is currently under development at this time.

2.2.2 COMMERCIALLY AVAILABLE DIGITAL RESOURCES

RIT Libraries also assumes responsibility for working externally through vendors, consortia, licensing agreements, etc., to assure that someone (not necessarily RIT Libraries) carries out preservation of commercially available digital resources so that RIT faculty, staff, and students will have adequate ongoing access to these resources for curriculum support, especially those resources which exist in digital form only. Examples of current categories of commercial resources:

- Those leased by RIT Libraries for curriculum support: Electronic databases, full-text electronic journals, full-text electronic books (TWC and consortia agreements)
- Those purchased by RIT Libraries for curriculum support: Individual electronic books, permanent back-files of electronic books, permanent back-files of electronic journals

2.3 SELECTION CRITERIA FOR DIGITAL PRESERVATION

This section outlines the way decisions are made regarding what will be preserved. Some RIT Libraries departments or affiliates have their own selection criteria for preservation. In cases where a RIT Libraries affiliate does not have a stated selection criteria, the selection criteria for the RIT Library Collections will be assumed. In instances where a separate policy exists, the selection criteria of the department or affiliate has priority over RIT Libraries selection criteria.

2.3.1 RIT LIBRARY COLLECTIONS SELECTION CRITERIA

RIT Libraries provides access to digital information resources such as (but not limited to) electronic books, electronic full-text journals, streaming videos, image databases, and citation databases that support the current academic programs of RIT. The majority of these resources are made available through annual subscriptions, with a smaller number purchased in perpetuity and an even smaller number freely available.

Since most of these digital information resources are provided and supported by vendors and other external agencies, the Wallace Library does not assume internal responsibility for the long-term preservation of those resources. For digital resources held by the library in perpetuity such as (but not limited to) purchased eBooks or back-files of selection journals, preservation is supported by the vendors or agencies associated with those resources.

Analog materials of the Wallace Library circulating collections are not digitized in-house for long-term public use; replacement of analog items are purchased as either analog copies or electronic versions from vendors and publishers. Digital resources created in-house from analog materials for interlibrary loan or electronic reserves are for temporary use only and are not preserved.

All electronic RIT student theses and dissertations are to be saved in perpetuity.

2.3.1A PRIORITY LEVELS

Other assets of enduring value will be selected for digital preservation based on their priority level.

Digital Preservation Priority Levels

Priority 1: Born-Digital Materials – Rigorous effort will be made to ensure preservation in perpetuity of material selected for preservation of both library resources and institutional records.

Priority 2: Digitized materials (no available analog) – Every reasonable step will be taken to preserve materials without a print analog when re-digitizing is not possible or no analog versions are located elsewhere. Also included are digitized materials that have annotations or other value-added features making them difficult or impossible to recreate.

Priority 3: Digitized materials (available analog) – Reasonable measures will be taken to extend the life of the digital objects with a readily available analog versions. However, the cost of re-digitizing as needed will be weighed against the cost of preserving the existing digital objects.

Priority 4: Ephemeral materials – No preservation steps will be taken for ephemeral materials such as: materials scanned for E-reserve and Document Delivery, odds and ends, portions of text, and content that is deemed unessential to the comprehensiveness of collections.

2.3.2 RIT ARCHIVES SELECTION CRITERIA

Born-Digital Materials: Selection criteria for born digital materials for RIT Archives, University Art Collection, and the RIT/NTID Deaf Studies Archive will follow criteria set out in each units' collection development policies.

Digital Reformatting: Selection criteria for preservation *digital reformatting* is as follows:

- **Value/Uniqueness:** To preserve and reduce handling of originals

- **Condition:** Items that are not serviceable because of damage or fragility and items stored on unstable media (e.g. videotapes, items made of plastic)
- **Use:** Original materials that have high frequency of demand

2.3.3 CARY GRAPHIC ARTS COLLECTION AND THE VIGNELLI CENTER SELECTION CRITERIA

2.3.3A PRIORITY LEVELS

Priority 1: Unique and Rare Items – Unique items for which there are no existing facsimiles are at the greatest risk.

Priority 2: Fragile Materials – Books and other materials that are too damaged or fragile to be handled without causing further damage are often not accessible to researchers.

Priority 3: Frequently Used Materials – Materials that are handled the most are the most susceptible to damage. Also, if they have a high rate of usage, then they are strong candidates for online access.

2.4 RIT RECORDS MANAGEMENT POLICY

University records will be identified for preservation and retained in accordance with the guidelines established in RIT's Records Management Policy C22.0 (http://www.rit.edu/academicaffairs/policiesmanual/sectionC/C22.html).

3 CHALLENGES ASSOCIATED

This section covers the current challenges and risks associated with RIT Libraries's current digital preservation program, as well as what is needed in order to meet those risks.

RIT Libraries acknowledges that there will always be budget restrictions and that not everything can be preserved. Additional challenges in maintaining digital infrastructure include:
- Digitization efforts may not be able to outpace format obsolescence
- Growth of digital materials over time may increase more quickly than RIT's available resources
- Even with the most advanced preservation tools available, when looking to preserve digital materials indefinitely, some bit loss is statistically inevitable
- Potential lack of consistency in following and maintaining submission standards

3.1 RISK ASSESSMENT

Although various RIT Libraries departments engage in digital preservation activities, there is an amount of risk present in RIT Libraries' current preservation operations. At this time, there is no unifying preservation plan. Without a singular policy, it is difficult to ensure quality control and consistency in RIT Libraries' digital collections. Additionally, it becomes harder in the long run to perform necessary maintenance on these collections.

Other risks of not having a digital preservation plan include:

- Loss of authenticity and integrity of a resource and its capacity for subsequent reuse due to continual development of computer hardware/software
- Loss of unique/irreplaceable items
- Loss of recorded RIT history, especially with born-digital materials
- Loss of opportunities to promote RIT through use of digital media

RIT Libraries' current preservation system also lacks a designated physical location to house the rapidly expanding amount of digital files being preserved.

3.2 NEEDS ASSESSMENT

As RIT Libraries is committed to providing on-going preservation support for digital resources, it is important that the risks listed above are addressed so as to prevent losses.

The creation and approval of this policy will help address the first risk by establishing a singular, unifying preservation document across RIT Libraries. This will apply preservation standards across all RIT Libraries units producing digital assets of enduring value and allow for regular maintenance and upgrades to be performed.

RIT Libraries also requires the establishment of a permanent location to house digital files for both preservation and access purposes. In addition to a storage space that can accommodate the ever-growing collection, it must also adhere to archival practices and safe-guards, such as outlined in 4.2 Preservation and Quality Control.

4 STRATEGIES

This section describes the strategies RIT Libraries uses to support the preservation infrastructure of its Digital Archives and provides and overview of the methodologies and philosophies supporting preservation activity at RIT Libraries.

4.1 OPERATING PRINCIPLES

RIT Libraries will provide reliable, scalable, flexible, cost-effective, sustainable, and auditable digital preservation repositories by adhering to the following operating principles:

4.1.1 OPERATING PRINCIPLE 1: THOROUGH DOCUMENTATION

Digital Archives managed by RIT Libraries will have digital preservation policies, procedures, and practices which are transparently documented and consistent. In addition, RIT Libraries will participate in digital preservation communities by upholding and creating standards, practices, and solutions.

These policies and procedures include but are not limited to:

- Versioning and withdrawal policies
- Sustainability, closure, and succession plans
- Guidelines for copyright, intellectual property rights and/or other legal rights related to copying, storage, modification, and use of digital resources
- Acceptable file formats and applicable metadata standards

4.1.2 OPERATING PRINCIPLE 2: FOLLOW LONG-TERM PRESERVATION STANDARDS

Digital Archives maintained by RIT Libraries will provide continued access to digital materials selected for preservation by providing a secure long term storage environment for its digital assets of enduring value. RIT Libraries does not consider digital preservation to be routine computer back-ups, but rather specialized long-term storage that adheres to specific preservation standards.

4.1.3 OPERATING PRINCIPLE 3: FOLLOW ARCHIVAL STANDARDS

Digital Archives maintained by RIT Libraries will guarantee the provenance, chain of custody, authenticity, and digital file integrity (bit-level and content) of its digital assets by adhering to archival standards.

4.2 PRESERVATION AND QUALITY CONTROL

Environmental, quality control, security, and other standards related to the management of hardware, software, and storage media containing archival copies of digital content will be based on the following preservation standards:

- **NDSA Digital Preservation Levels 1- 4** (http://www.digitalpreservation.gov/ndsa/activities/levels.html) -- The "Levels of Digital Preservation" are a tiered set of recommendations for how organizations should begin to build or enhance their digital preservation activities.

- **Trustworthy Repositories Audit & Certification (TRAC):** Criteria and Checklist (http://www.crl.edu/sites/default/files/attachments/pages/trac_0.pdf) – TRAC is a document developed by the Center for Research Libraries and other agencies that provides objective measurement criteria to determine the trustworthiness of a digital repository.

Actions based on these standards include, but are not limited to:

- Storing three data back-ups of preservation copies in separate geographic zones in case of disasters
- Keeping preservation copies of digital assets stored in a "dark archive" or otherwise ensure that they not accessible for significant editing or deletion
- Maintaining at least one back-up of a preservation copy with a separate institution for security reasons
- Maintaining and regularly auditing both access and preservation copies in order to detect damage and repair it by overwriting the known-bad copy with data from a mezzanine/working copy

Long term preservation of digital resources will be determined on a case-by-case basis, determined by the appropriate RIT Libraries staff member. Some resources may be retained for only a few years, while others will be retained and preserved indefinitely (see 2.3 Selection Criteria for Digital Preservation). Long term preservation storage may be performed by RIT campus IT, directly by RIT Libraries, or by third-party agents as long as it meets these standards.

4.3 PRESERVATION METADATA

Metadata (data about data) performs an integral role throughout the digital preservation process. These traditional categories of metadata that describe the intellectual/artistic aspects of a digital object and identify searchable access points for that object are supplied as thoroughly as possible:

- Title and title variations of the work
- Associated names (person or corporate body) and their roles
- Edition or version
- Publication or creation information/date
- Attributes of the object/content portrayed in the digital file, if applicable
- Attributes of the digital file
- Subject and genre terms (using controlled vocabulary)
- Additional information describing the object in more detail
- History of the object and its provenance, if applicable
- Relationships between the object and other objects, if applicable

- Location/access information

In addition, these categories address specific aspects of digital preservation:

- **Administrative:** Information used to manage digital objects, including rights management (information describing rights and usage permissions associated with a digital object.)
- **Technical:** Information describing the hardware and software needed to maintain a digital object. Much of this information is generated by the hardware and software.
- **Structural:** Information identifying the relationships between digital objects.
- **Provenance:** Information documenting the history of a digital object and any actions taken to maintain and provide access to that object.

RIT Libraries's preservation program must be able to support metadata ingested with digital resources, as well as create its own metadata. Current national and international standards associated with the categories of metadata described above will be followed and implemented. It is understood that various metadata schemas and controlled vocabularies may be used for the description of intellectual/artistic content. For a list of current standards utilized at this time by RIT Libraries, please see Appendix A.

The Open Archival Information System (OAIS) reference model provides a framework for metadata associated with digital preservation, and serves as a guide for RIT Libraries in its digital preservation practices. For information on OAIS, see http://www.oclc.org/research/publications/library/2000/lavoie-oais.html

4.4 ACCESS AND USE

Digital preservation also entails maintaining the accessibility of digital items. This includes maintaining the ability to locate and reliably access digital files.

RIT Libraries reserves the right to restrict access to any of the content in its Digital Repositories. In cases where all necessary permissions to share content has been obtained and the content has been deemed suitable for sharing by RIT Libraries administrators, it is acceptable to either provide direct access online or to transfer individual files, either freely or for a cost as determined by the owner of the content and/or RIT Libraries employees.

4.5 LIFECYCLE MANAGEMENT

In order to assure the principles and strategies stated above are consistently applied to RIT Libraries digital preservation practices, digital objects selected for preservation must be supported through every step of its lifecycle.

4.5.1 RIT LIBRARIES DIGITAL OBJECT LIFECYCLE
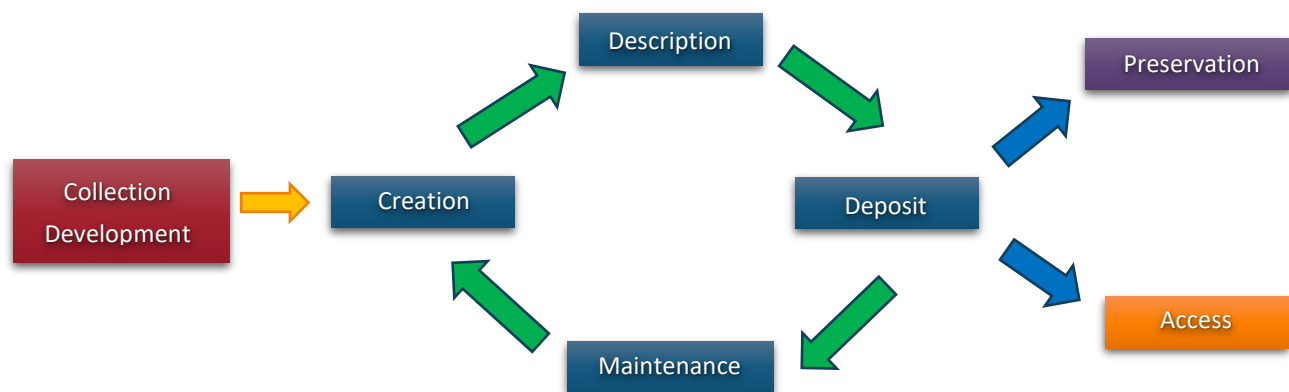
4.5.2 LIFECYCLE SUPPORT

Lifecycle Step	Description	Who is Responsible	Support needed
Collection development	Assessment and selection of objects appropriate for digital preservation	Staff of RIT Libraries units responsible for objects	Selection guidelines and criteria to designate digital assets of enduring value
Creation	Digitization of analog items, preservation and access file creation for digitized and born-digital objects	Staff of RIT Libraries units responsible for objects	Established best practices for digitization procedures and preservation/access file formats
Description	Addition of relevant information, including administrative, descriptive, structural, and technical metadata	Staff of RIT Libraries units responsible for objects	Established metadata standards
Deposit	Item and metadata deposit into preservation and access system	Staff of RIT Libraries units responsible for objects	Digital Asset Management system(s) in place to receive digital objects for both preservation and access; adequate server space to contain ever-growing collection
Maintenance	Fixity checking, format migration when necessary	Staff of RIT Libraries units responsible for objects	Fixity checking schedule, format migration plan

5 SUSTAINABILITY

In order to support a digital preservation program, a commitment on the part of RIT Libraries to provide adequate resources in the areas of infrastructure/equipment, staffing, and funding is necessary not only for the initial start of

a Center-wide program, but also to provide the potential innovative use of our digital collections and to ensure a sustainable model for the future.

Developing a sustainable digitization program requires consideration into technology, finances, and administration, as they apply to digital objects and the digitization program as a whole. Digital objects need consistent maintenance in order to meet the preservation goals of accessibility and content integrity. The program itself requires staff leadership and expertise as well as funding and infrastructure in order to maintain existing digital collections and facilitate the continual addition of new digital objects and new collections.

The sections below outline the organizational and economic commitments necessary to establish a successful and sustainable digitization program.

6 ORGANIZATIONAL COMMITMENTS

6.1 ROLES AND RESPONSIBILITIES

The selection, digitization, and preservation of other assets, including the creation of metadata, will be completed at the local level by the appropriate curators/librarians/managers in participating units. They will follow the standards created by the Metadata and Digital Scholarship Services (MDSS) department and the Digital Projects Team. A list of the current members of the Digital Projects team can be found in Appendix D.

The units currently identified for preserving selected digital assets are:
1. RIT Archives
2. Cary Graphic Arts Collection
3. Vignelli Center for Design Studies

6.1.2 DISTRIBUTED RESPONSIBILITIES

RIT Libraries supports cooperative projects (example: New York Heritage participation), however, participation in cooperative projects must support the mission of RIT Libraries. Due to limited time and resources, RIT Libraries is not able to participate in all cooperative projects that support its mission, but when approached, RIT Libraries will endeavor to support these types of projects to the best of its ability.

6.2 OUTREACH AND EDUCATION

RIT Libraries will work with digital material creators to influence their standards and practices and to increase their awareness of preservation needs.

Informing and educating the RIT Libraries staff on the importance of active digital preservation is one of the first steps in order to ensure that a common understanding of the reasons for digital preservation exists within RIT Libraries, and that staff members, especially those who work with the public, can describe and explain RIT Libraries's practices in this area.

Outreach to the RIT community must be undertaken with the following constituents:

- **RIT units who possess records and materials that need digital preservation (working with RIT Archives)**
  Educating RIT units possessing materials suitable for digital preservation allows RIT Libraries to identify the types and amount of items that need to be preserved per the RIT Records Management Policy. Establishing

workflows and gathering additional on-campus proponents in support of digital preservation provides data that would serve as the basis for any requests for administrative support.

- **Information Technology Services (ITS)** (institute-wide technical support and preservation-level storage
  Educating ITS in digital preservation practices would help to identify large-scale issues and costs for digital preservation (various storage needs and preservation-level back-up practices).

- **Faculty members (research data and results)**
  Educating faculty members on the various levels of digital preservation appropriate for research results and research data storage, and emphasizing the immediate and longer-term benefit of this practice would ensure that a more accurate record of their work is kept and accessible to researchers world-wide. To a lesser extent, this step would also apply to RIT students, especially those at the graduate level.

- **RIT administration (financial support)**
  Providing proof **to RIT administration** of the need to embrace digital preservation practices (once the above groups have been addressed) and identifying the progressive steps to take, along with the necessary resources and associated costs would be the ultimate goal in working to establish institute-wide support of digital preservation practices. There is much competition for resources, so making a successful case will be challenging.

A plan must be developed for informing these groups of the importance of and need for digital preservation in order to better support their work and RIT overall, and to encourage institute-wide digital preservation practices and funding in the (near) future.

7 ECONOMICS AND FINANCIAL COMMITMENTS

This section documents expected costs and who assumes the responsibility for those costs.

7.1 INFRASTRUCTURE COSTS

Goal	Reasons for Action	Consequences of Inaction
Marketing/promotional use	Public relations opportunities	Loss of opportunity to make connection to RIT community and with potential new constituents
RIT Record Retention	Management of digital business records	Loss of ability of business to function efficiently affecting decision making; loss of corporate standing as information is inaccessible or lost
	Business requirements causing increased volume of documents and consequent increased size of archive	Loss of staff time managing voluminous amounts of digital data that is unorganized
Data Management	Easier to repurpose and migrate data	Loss of time spent changing format for each different use

	Managing and preserving a digital asset's lifecycle in a systematic process	Loss of staff time due to preservation on an ad hoc basis
	Workflow efficiency	Loss of investment in staff time for recreating files if lost
Revenue Opportunities	Opportunity to market and sell copies of assets commercially	Loss of monetary investment in creating and storing assets
	Increase in visibility of assets	Loss of increased donations due to lack of knowledge of existing assets; loss of prestige

7.2 FUNDING SUPPORT

Steps to obtaining funding support:

1. Identify projects in need of funding according to the priorities defined in the Selection Criteria section of this document.
2. Identify specific funding (internal or external) for project.
3. Create proposal to submit to institute for non-specific funding (i.e. internal funds from operating budget) and/or external agency for outside funding (different sources may be appropriate for different collections). This may be an incremental process.

8 EVALUATION AND UPDATING

Staff from RIT Libraries and Vignelli Center revised and expanded the existing policy created in 2011.

In order to stay as relevant and up-to-date as possible, this policy is intended to be a living document. It will be reviewed and evaluated on a biannual basis by members of the Digital Projects Team and associated colleagues from the RIT community.

8.1 VERSIONING POLICY

Major revisions will begin with 1.0 and increment by 1.0 and will **always** end in **.0**. Major revisions constitute final, approved drafts that are made available to the wider RIT Libraries community. Major revisions must be approved by the Digital Projects Team in order to be made official. After approval, the most current version will be housed in the institutional repository, RIT Scholar Works (http://scholarworks.rit.edu/).

Minor revisions will increment by **0.1**. Minor revisions constitute drafts that have not yet been approved for dissemination.

Previous major revisions and all the minor revisions in between will be retained in file server.

8.2 REVIEW SCHEDULE

This policy will reviewed on a biannual (once, every other year) starting from the approval of Version 1.0.

Version Number	Date of Approval	Date of Next Review
1.0	11-2015	11-2017

8.3 REVISION HISTORY

Date	Version	Editor	Sections Altered	Revision Notes
07-2021	2 (Pending)	Frances	All	Overall updates, including department name/organizational change from TWC+ to RIT Libraries Updated Mission & Values section with current mission statement at strategic plan Currently pending approval by Digital Projects Team
12-2015	1.1	Frances Andreu	8.3	Updated storage location of most recent policy versions
08-2015	1.0	Frances Andreu	All	Editing and updating previous draft from April Younglove, 07-2014

RELATED DOCUMENTS AND FURTHER READINGS

Northeast Document Conservation Center (NEDCC). (n.d.). NEDCC Digital Preservation Policy Template. Retrieved from: https://www.nedcc.org/assets/media/documents/SoDAExerciseToolkit.pdf

Noonan, D.W. (2014). Digital preservation policy framework: A case study. *EDUCAUSE Review.* Retrieved from: http://www.educause.edu/ero/article/digital-preservation-policy-framework-case-study

Yale University Library. (2007). Policy for digital preservation. Retrieved from: http://www.library.yale.edu/iac/DPC/revpolicy2-19-07.pdf

GLOSSARY

National Digital Stewardship Alliance Glossary (http://www.digitalpreservation.gov/ndsa/ndsa-glossary.html)

NYHeritage Digital Imaging Basics (http://www.nyheritage.org/sites/default/files/docs/About/DigImgBasics.pdf)

- **Access:** A transformed version of an original source file, often called a "service," "derivative," "delivery," "viewing" or "output" file, used to facilitate access to or additional use of the content.
- **AI:** Adobe Illustrator proprietary file format
- **Analog:** A device or medium in which data is represented by continuous physical qualities
- **Backup**: Additional copies of a digital asset made to protect against loss due to unintended destruction or corruption of the primary set of digital assets. The essential attribute of a back-up copy is that the information it contains can be restored in the event that access to the master copy is lost.

- **BMP:** uncompressed, huge file size, not recommended for archival or web use
- **Born-Digital:** Items that were created digitally—there is no original analog copy
- **Digital Archive:** A digital archive is a system for storing digital assets of enduring value and their associated metadata for long term preservation. A digital archive may be a single software or a combination of resources that create a secure storage environment for digital objects.
- **Digital Assets of Enduring Value:** Digital assets of enduring value are those generated by RIT, created/collected because of their unique link to RIT, created/collected because they enhance RIT's special collections, or acquired in support of RIT's academic curriculum.
- **Digital Object:** A digital object consists of metadata, content files and a mechanism to link the two together. CDL Guidelines for Digital Objects *http://www.cdlib.org/services/access_publishing/dsc/contribute/docs/GDO.pdf*
- **Digital Preservation:** Digital preservation is the combination of technical activities, policies, strategies and actions that provide long-term and persistent access to those aspects of a digital resource which must be preserved over time in order for the digital resource to avoid degradation and to remain accessible and meaningful. *Digital resources include objects converted into digital form from existing collections of manuscripts, maps, visual images, and sound files, as well as born-digital materials such as web sites, videos, and data*
- **Digital Resources:** Digital resources are single digital objects or collections of digital objects that are obtained, created or supported by RIT Libraries for the current and future use of the RIT community, and in many cases for the current and future use of scholars world-wide.
- **Digitally reformatting:** The process of converting an analog item into a digital format
- **Fixity:** The state of being stable and unchanged
- **GIF:** An image file that supports only 256 colors, so it is better suited to clip art and diagrams than photographs
- **JPG/JPEG:** An image file that is typically lossy, but good for web display, most common format used for image distribution today
- **JPG2000:** lossless form of JPG, must have a special paid program to create these files
- **Lossy:** A type of compression method that results in the loss of some data when the file is uncompressed (irreversible)
- **Lossless:** A type of compression method that retains all data in the file when uncompressed (reversible)
- **Mezzanine copy:** also known as a "working" copy or and "editing" copy; a lightly compressed master file (not the preservation copy) for active editing and intermediate storage. Used to create access copies as necessary. Replace the mezzanine copy if damage occurs to it with the preservation file.
- **PNG:** An image file designed for web browser display, supports truecolor (16 million colors)
- **Preservation copy:** Digital content targeted for preservation that is considered the master version of the intellectual content of any arbitrary digital resource. Preservation master files may capture additional information about the original beyond the content itself. Because they are created to high capture standards, preservation master files could take the place of the original record if the original was destroyed, damaged, or not retained. Preservation masters generally do not undergo significant processing or editing. Preservation masters are often used to make other copies including reproduction and distribution copies.
- **PSD:** Adobe Photoshop proprietary file format
- **RAW:** lossless image format used by digital cameras for creating large originals; different camera companies have different varieties of RAW formats and users must have the camera's proprietary software program to open and edit RAW images
- **Received Version:** The primary authentic and unique item, either the original or the closest surviving surrogate or copy, as originally acquired by the Library. See also "Preservation Copy."
- **TIFF:** many archivists prefer this image format for long term file storage; low compression and medium file size; some popular OCR programs output in this file format

- **Wrapper:** refers to audio-visual file formats as they must package several sets of information including video, multiple audio channels, technical metadata, time-based metadata (such as subtitles) and conventional metadata

APPENDIX A: METADATA SCHEMAS

Metadata rules, schemas and carriers in use at RIT Libraries are:

- Anglo-American Cataloguing Rules (AACR2-R,) 2nd rev. ed. http://www.aacr2.org/
- Describing Archives: a Content Standard (DACS,) 2nd ed. http://files.archivists.org/pubs/DACS2E-2013_v0315.pdf
- Dublin Core   http://dublincore.org/metadata-basics/
- Encoded Archival Description (EAD)   http://www.loc.gov/ead/index.html
- Machine Readable Catalog record (MARC)   http://www.loc.gov/marc/
- Resource Description and Access (RDA)   http://www.loc.gov/aba/rda/
- Descriptive Cataloging of Rare Materials (Books) (DCRM) http://rbms.info/dcrm/dcrmb/

Under examination for future implementation:
- Preservation Metadata Implementation Strategies (PREMIS)   http://www.loc.gov/standards/premis/
- Visual Resources Association (VRA) Core.   http://www.loc.gov/standards/vracore/

The use of existing standardized controlled vocabularies is strongly encouraged. The actual vocabularies used for objects or collections will be determined by the disciplines and formats of the object's intellectual/artistic content and purpose.

Controlled vocabularies in use at RIT Libraries at this time are:
- Art and Architecture Thesaurus (AAT)
    - http://www.getty.edu/research/tools/vocabularies/aat/index.html
- Library of Congress Name Authority File (LC NAF)
    - http://authorities.loc.gov/
- Library of Congress Subject Headings (LCSH)
    - http://authorities.loc.gov/
- Rare Books and Manuscript Section (RBMS) Controlled Vocabularies
    - http://www.rbms.info/committees/bibliographic_standards/controlled_vocabularies/
- Thesaurus for Graphic Materials (TGM)
    - http://www.loc.gov/pictures/collection/tgm/
- Thesaurus for Use in College and University Archives
    - http://www2.archivists.org/thesaurus
- Union List of Artist Names (ULAN)

    - https://www.getty.edu/research/tools/vocabularies/ulan/index.html

APPENDIX B: BEST PRACTICES FOR DIGITAL FILE FORMATS

The goal of digital preservation is to maintain accessible and faithful representations of works. As such, selection of the appropriate file format is essential to ensuring the longevity of files that have been selected for preservation. The goal of digital preservation is to maintain an accessible and faithful representation of the work.

There are several factors that must be taken into consideration when selecting a file format:

- **Compression:** In day to day usage, images are often compressed in order to reduce file size. While to the human eye, compressed images may look identical to the original, the compression process ultimately results in the loss of quality and can introduce errors into the file. As the purpose of preservation is to

preserve content integrity, **it is recommended that archival copies of files remain uncompressed**. It is acknowledged that uncompressed files are large and obtaining enough space to store these files can be challenging, especially for a growing collection. Lossless compression can reduce the size of a file, but retain all the information necessary to recovering the original file. Lossless compression is recommended for working copies that are used to edit works and re-created access or preservation copies if necessary.

- **Open vs. Proprietary:** Closed propriety formats restrict their encoding which makes them harder to preserve as their structure and composition are unknown, whereas open formats are not encumbered by usage restrictions and are publicly documented. Proprietary formats also tend to require specialized software in order to run, which can limit access.
- **Usage:** It is also important to consider how widespread the usage of the format is. Widely-used formats are considered to have greater longevity due to a larger community of users, disseminators, and content creators.

RIT LIBRARIES RECOMMENDATIONS FOR ACCESS, PRESERVATION, AND WORKING COPIES

RIT Libraries supports storage of at least three different versions or copies of an archived file:

- **Preservation copy:** intended for long-term preservation. This also functions as the Master copy.
- **Working copy:** the file where edits might be made in order to prepare an access copy, or the file for any other uses.
- **Access copy:** the file that users will use to view the saved file on a regular basis

For preservation of Digital Textual Works, Electronic Serials, Digital Musical Compositions, Digital photographs, Graphic Images, Digital Audio, Digital Motion Pictures, Datasets, and Videogames see: Library of Congress Recommended Formats Statement 2015-2016: http://www.loc.gov/preservation/resources/rfs/TOC.html

PHOTOGRAPHS AND DIGITAL IMAGES

	File Type	Bit-Depth	Resolution
Preservation Copy	TIFF	16-bit grayscale for B&W 24-bit RGB for color	600-800 DPI (greater dpi for smaller physical images)
Working Copy	TIFF, JPG2000	8-bit grayscale for B&W 24-bit RGB for color	600-800 DPI (greater dpi for smaller physical images)
Access Copy	JPEG, PNG	8-bit grayscale for B&W 24-bit RGB for color	150 - 300 DPI

TEXT FILES

	File Type	Bit-Depth	Resolution
Preservation Copy	PDF/A	1-bit bitonal 8-bit grayscale	600 dpi 400 dpi
Working Copy	TIFF, PDF	1-bit bitonal 8-bit grayscale	600 dpi 400 dpi
Access Copy	JPEG, PNG	8-bit grayscale for B&W 24-bit RGB for color	150 – 300 dpi

AUDIO

	File Type	Bit-Depth	Sample Rate
Preservation Copy	uncompressed WAV-BWF extension, AIFF, PCM	24-bits	96 kHz
Working Copy	uncompressed WAV, AIFF	24-bits	96 kHz
Access Copy	MP3, Quicktime	16-bits	44.1 kHz

VIDEO

	File Format (Wrappers)	Frame Rate	Resolution
Preservation Copy	MXF	30 fps (analog) Original fps (digital)	640 x 480 square pixels (analog) Original resolution (digital)
Working Copy	Uncompressed AVI, MOV	30 fps (analog) Original fps (digital)	640 x 480 square pixels (analog) Original resolution (digital)
Access Copy	MOV, MPEG 4	30 fps	320 x 240 square pixels (SD) 854 x 480 square pixels (HD)

ARCHIVED WEBSITES

	File Format (Wrappers)		
Preservation Copy	.WARC		
Working Copy	.WARC		
Access Copy			

SOURCES (CONSULTED AS OF SEPTEMBER 2015)

Columbia College Chicago Archives – College Archives Digital Preservation Policy:
http://about.colum.edu/archives/pdfs/DigitalPreservationPolicy.pdf

Consortium of Academic and Research Libraries in Illinois – Guidelines for the Creation of Digital Collections:
http://www.carli.illinois.edu/sites/files/digital_collections/documentation/guidelines_for_audio.pdf

Council on Library and Information Resources – Capturing Analog Sound for Digital Preservation: Report of a Roundtable Discussion of Best Practices for Transferring Analog Discs and Tapes:
http://www.clir.org/pubs/reports/pub137/sum137.html

Digital Preservation Coalition – Technology Watch Report: Preserving Moving Pictures and Sound:
http://dx.doi.org/10.7207/twr12-01

D-Lib Magazine – Digital Preservation File Format Policies of ARL Member Libraries: An Analysis:
doi:10.1045/march2014-rimkus

Harvard Library – File Format & Content Creation Guidance: http://library.harvard.edu/preservation/digital-preservation_content-guidance.html

International Association of Sound and Audiovisual Archives (IASA) – Guidelines on the Production and Preservation of Digital Audio Objects: http://www.iasa-web.org/tc04/audio-preservation

Library of Congress Recommended Formats Statement 2015-2016:
http://www.loc.gov/preservation/resources/rfs/TOC.html

Library of Congress Sustainability of Digital Formats: http://www.digitalpreservation.gov/formats/

New York Heritage – Image Resolution Guidelines:
http://www.nyheritage.org/sites/default/files/docs/About/ImgRes.pdf

RUCore Rutgers Community Repository – Recommended Minimum Standards for Preservation Sampling of Moving Image Objects: https://rucore.libraries.rutgers.edu/collab/ref/dos_avwg_video_obj_standard.pdf

U.S. National Archives and Records Administration – FAQ About Digital Audio and Visual Records:
http://www.archives.gov/records-mgmt/initiatives/dav-faq.html

U.S. National Archives and Records Administration (NARA) – Technical Guidelines for Digitizing Archival Materials for Electronic Access: http://www.archives.gov/preservation/technical/guidelines.pdf

APPENDIX C: NAMING PRACTICES

File naming schemes should be determined prior to starting a digitization project. Creating and consistently using a standard file-naming convention ensures that the digital resources are appropriately associated with their metadata, and if separated from that metadata, are easily recognizable by the file names. Establishing a directory structure ahead of time in which to store files is also recommended, although file names should be stand-alone and should not rely on the directory structure in order to be recognizable.

Other Considerations:

- A file name represents a unique digital resource, therefore its file name must be unique.
- Files with unique names are less likely to be overwritten.
- File names that are descriptive (providing information about the files' contents) allow those files to be easily identifiable without opening the files, and allow efficient grouping of those files.

GENERAL GUIDELINES FOR ESTABLISHING APPROPRIATE FILE-NAMING CONVENTIONS:

- o Do not use spaces in the file name.
- o Do not use special characters other than a hyphen (-) or an underscore (_)
- o Use capital letters sparingly.
- o Record dates in this format; YYYYMMDD
- o When using a personal name, record the surname first.
- o Incorporate the project name (or its abbreviation)
- o Include brief unique information for the contents of the file
- o If using a numbering system for a project, estimate the number of files and utilize zeros as fillers in order to maintain consistency for numbering characters. For example, 0001, 0020, 0345, 1234
- o If needed, indicate versions of a file by using v and the number. For example, v2, v3
- o Document decisions about components included in and acronyms used for file names so they can be understood

APPENDIX D: DIGITAL PROJECTS TEAM AS OF JULY 2021

Ryan Ammerman – Systems Administrator

Frances Andreu – Digital Initiatives Librarian

Greg Decker – Manager, Metadata and Digital Scholarship Services

Elizabeth Call – RIT Archivist

Amelia Hugill-Fontanel – Associate Curator

Teresa Kellett – Library Systems Support Analyst

Nicholas Paulus – Digital Initiatives Specialist

Ella Von Holtum – Assistant Archivist

Rebekah Walker – Digital Humanities Librarian