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DIGITAL READINESS TOOLKIT

A complete guide to creating and tending a digital collection



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About the Toolkit

Public history organizations of all types and sizes — a local public library, a community genealogy group, a tribal language preservation program, an historic house museum, a county historical society — collect and preserve an incredible range of materials that reveal a multitude of stories from America’s past and present. Digital access to these materials has the power to enrich and connect people and communities in new and meaningful ways.

The Digital Readiness Toolkit equips public history practitioners — particularly those doing public history work in small, rural, or underrepresented communities, with few or no paid staff — with the foundational knowledge needed to support digital readiness in their institutions. We define digital readiness as having the skills, tools, and resources to provide online public access to archives and cultural heritage materials.

This toolkit does not replace the need for hiring professional archivists, curators, or collection managers, nor is it a substitute for comprehensive training in digital preservation. Rather, it provides an entry point to the topic and a shared framework for planning and benchmarking. It is a living document which will evolve in response to community input, changes in technology, and the availability of new resources.

Funding

This project was made possible in part by planning and implementation grants from the National Historical Publications and Records Commission.

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Please contact the Recollection Wisconsin project management team at with any questions or comments regarding this document.

Building a Digital Readiness Community of Practice in Wisconsin

In 2020-2021, staff and volunteers representing cultural heritage institutions across Wisconsin met regularly to identify priorities, plan events, and provide feedback on content created to support the digital readiness needs of Wisconsin’s public history practitioners. This Digital Readiness Community of Practice Launch Committee was central to the development of the Digital Readiness Levels and the Digital Readiness Toolkit.

Committee members:

- Chris Allen, Kenosha County Historical Society
- Ben Barbera, Milwaukee County Historical Society
- Bonnie Byrd, Waukesha County Historical Society
- Michelle Gobert, Forest County Historical and Genealogical Society
- Jennifer Gurske, Madison Trust for Historic Preservation
- Joe Hermolin, Langlade County Historical Society
- Cheryl Kern-Simirenko, Stanley Area Historical Society
- Janean Mollet-Van Beckum, History Center of Washington County
- Tammy Schutz, Barron County Historical Society/Pioneer Village Museum
- Katie Stilp, Appleton Public Library
- Robin Untz, Lake Mills-Aztalan Historical Society

Committee advisors and coordinators:

- Kristen Leffelman, Wisconsin Historical Society
- Janet Seymour, Wisconsin Historical Society
- Vicki Tobias, WiLS
- Kristen Whitson, WiLS

Assessing and Addressing Digital Readiness for Audiovisual Collections

In 2022-2023, WiLS partnered with the Community Archiving Workshop (CAW), to update and enhance the Toolkit. CAW, a program of the Association of Moving Image Archivists (AMIA), received a grant from the National Historical Publications and Records Commission (NHPRC) to support the project Assessing and Addressing Digital Readiness for Audiovisual Collections.

This work built on the Digital Readiness Toolkit developed by WiLS, Recollection Wisconsin, and the Wisconsin Historical Society, adapting it to incorporate the unique needs of audiovisual collections.

A new self-assessment survey and related documentation were piloted with twelve CAW partner organizations in four regions: the Midwest, the Southeast, the Southwest, and California. The project also supported a partner-driven Community of Practice – a space in which organizations support and learn from each other in order to become better stewards of their collections. The self-assessment survey and other audiovisual resources in this edition of the Toolkit were contributed by Community Archiving Workshop members:

- Kelli Hix
- Marie Lasco
- Amy Sloper
- Moriah Ulinskas
- Pamela Vadakan

- Sandra Yates

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- Judy Jones, Judge Eghart House
- Theresa Hebert, The Highground Veterans Memorial Park
- Maryanne O'Dowd, Sister Bay Liberty Grove Fire Department Oral History Project
- Sarah Lundquist, WiLS/Curating Indigenous Digital Collections

Thank you to Bronwen Masemann, Masemann Research Services, for contributing to the sections of this Toolkit focused on audiovisual resources and for providing overall feedback. These contributions were made possible thanks to a grant to the Community Archiving Workshop (CAW), a project of the Association of Moving Image Archivists (AMIA), from the Institute of Museum and Library Services (IMLS RE-85-18-0039-18).

The twelve CAW partner organizations who piloted the self- assessment survey and provided feedback for the audiovisual specific resources needs are:

- African American Library and Museum at Oakland
- Audiovisual Heritage Center (AVHC), Nashville Metro Archives
- Fisk University
- History Museum at the Castle, Appleton, WI
- Huhugam Heritage Center-Gila River Indian Community
- Indian Pueblo Cultural Center Library & Archives
- Karuk Tribal Libraries
- Sacramento Public Library
- University of Texas at El Paso Library
- University of Wisconsin-Eau Claire Archives and Special Collections
- University of Wisconsin-Madison University Archives
- Wyandotte Nation

The Digital Readiness Toolkit and related resources build on and borrow from several foundational resources that make digitization and digital preservation best practices accessible to libraries, archives, museums, and historical societies of all sizes.

We are grateful to the following programs and initiatives for their leadership in this area:

- Sustainable Heritage Network, Center for Digital Scholarship and Curation, Washington State University
- National Digital Stewardship Alliance (NDSA) of the Digital Library Federation (DLF) at the Council on Library and Information Resources (CLIR)
- Preserving digital Objects With Restricted Resources (Digital POWRR) Project
- Standards and Excellence Program for History Organizations (STEPS), American Association for State and Local History (AASLH)
- Digital Collections Stewardship series of courses, OCLC / WebJunction

This project was made possible by grants to WiLS (Wisconsin Library Services) from the National Historical Publications and Records Commission, the granting arm of the National Archives and Records Administration:

- Planning a Community of Practice for Digital Readiness in Wisconsin, NHPRC Archives Collaboratives Planning Grant RJ-102848, 2019
- Building a Statewide Digital Readiness Community of Practice, NHPRC Archives Collaboratives Implementation Grant RJ-103067, 2021
- Assessing and Addressing Digital Readiness in Audiovisual Collections, NHPRC Archives Collaboratives Implementation Grant

About the Partners

Recollection Wisconsin

Recollection Wisconsin brings together photos, maps, documents, oral histories, and other digital collections from Wisconsin libraries, archives, museums and historical societies and shares them with the world in partnership with the Digital Public Library of America. The Recollection Wisconsin consortium is administered by WiLS and managed by six governing partners: Marquette University, Milwaukee Public Library, University of Wisconsin-Madison, University of Wisconsin-Milwaukee, Wisconsin Department of Public Instruction, and the Wisconsin Historical Society. For more information, visit <https://recollectionwisconsin.org>.

WiLS

WiLS (formally Wisconsin Library Services) is a non-profit membership organization that facilitates collaborative projects and services to advance library service, primarily in the state of Wisconsin. WiLS members include public, academic, K12 and special libraries as well as cultural institutions, government agencies, and other non-profits. For more information, see <https://wils.org>.

Wisconsin Historical Society

The Wisconsin Historical Society, founded in 1846, ranks as one of the largest, most active, and most diversified state historical societies in the nation. As both a state agency and a private membership organization, its mission is to help people connect to the past by collecting, preserving and sharing stories. The Wisconsin Historical Society serves millions of people every year through a wide range of sites, programs and services. For more information, visit <https://wisconsinhistory.org>

Community Archiving Workshop

The [Community Archiving Workshop \(CAW\)](https://communityarchiving.org/) is both a model and a core group of a dozen members of the Association of Moving Image Archivists, an international nonprofit association dedicated to the preservation and use of moving image media. The group works together to mobilize audiovisual experts, regional community members, and library/archive professionals to jumpstart preservation of community-held audiovisual recordings which are at risk of obsolescence and loss. While anyone can hold a workshop or use the CAW models, current CAW projects focus on supporting under-represented and geographically isolated collections. Often the workshop focus is on inventory and assessment of a collection. However, CAWs have also included digitization, digital file organization, film inspection, and other activities. The workshop often includes tours, talks, screenings, and meals together which build strong regional networks and develop ideas for collaboration. For more information, visit <https://communityarchiving.org/>.

How to Use This Toolkit

Digital readiness is defined by WiLS as: “Having the knowledge, tools, resources and infrastructure to provide online public access to archives and historical records.” The Community Archiving Workshop also defines digital readiness as “the ability to preserve obsolete audiovisual formats and provide long-term storage of digital records.” CAW recognizes that online public access is not always possible or preferable for digital audiovisual materials with privacy restrictions or other cultural restrictions.

Digital stewardship is defined by the Society of American Archivists as “the management of digital objects throughout their life cycle to facilitate their long-term preservation and use.”

A **digital project** is defined by WiLS and CAW as any project that involves the creation, storage, or management of digital files. Throughout the Toolkit, we use the phrase “digital projects” as an umbrella term to encompass digitization as well as digital stewardship, or the ongoing work of maintaining digital collections.

Digital Readiness Levels

The Toolkit focuses on seven topics at the heart of digital cultural heritage work:

- **Planning and prioritization:** What is your project plan and how will you decide what to digitize?
- **Permissions and copyright:** How will you know if you can share these materials?
- **Digitization:** How will you undertake the actual digitization work?
- **Description:** How will you describe the digitized materials?
- **Sharing and access:** How will you share what you’ve digitized?
- **Storage and maintenance:** What is the long-term plan for storing digital materials?
- **Evaluation:** How will you know that what you set out to do was achieved?

Each of these focus areas is organized into three levels: Bronze, Silver, and Gold. This tiered structure is a way to break down a large and complex process into smaller achievable steps. Together, these seven focus areas and three levels form a structured roadmap to plan and sustainably grow a digital initiative.

Bronze: Laying a Strong Foundation

In this level, you will get your organization ready for successful digital work. You’ll define your goals, shore up your documentation and storage, and understand your options for moving forward.

Silver: Putting it Into Practice

In this level, you will identify, plan, and carry out a small-scale digital project. As you digitize, describe, share, and store a focused group of materials, you'll test-drive the standards and processes you identified in the Bronze level.

Gold: Refining and Sustaining

In this level, you will strengthen your digital program by adopting key policies and enhance your ongoing digital project work with more advanced standards and procedures.

Of course, these tidy categories and incremental steps are much messier in the real world. Chances are, your organization may be further along in one focus area than another; for instance, you might already be following the Gold-level recommendations for digitizing, but at the Silver level for description, and the Bronze level in other areas. Or maybe you're all the way to the Gold level with your photograph collections, but just getting started at the Bronze level with audio and video collections. You might set a long-range goal to reach the Gold level in all areas, or you might decide that the Bronze level is the best place for your organization to stay. All of these approaches to digital readiness are perfectly valid! We encourage you to take what is useful to you in this Toolkit, mix and match and repurpose in the ways that you know will work best for your organization and your community.

For a video describing the Digital Readiness Levels and Focus Areas, visit [Recollection Wisconsin's YouTube channel](#).

Navigating the Toolkit

Each section of the Toolkit opens with a short checklist of key activities for that focus area and level (you can also find all of those key activities together in one big checklist in [Appendix H: Key Activities](#)). After that, you'll see a brief description of each activity, plus links to real-world examples, articles, and tools from other sources that we find particularly helpful.

Working with audiovisual materials such as film, videotape or audiotape? These collections have special challenges for identification, digitization, and preservation. Throughout the Toolkit, you'll see guidance and resources specific to A/V materials. Many of the overarching principles are the same for any type of collection – make a plan, obtain permission, digitize, create metadata, etc. – but the order of steps might be different for A/V materials. Two of the main tools for assessing your audiovisual collections are the [Audiovisual Digital Readiness Self-Assessment Survey](#) and the [Audiovisual Inventory Template](#). If you're embarking on a project that includes A/V materials, we recommend adding these steps into your navigation of the Toolkit.

The Digital Readiness Self-Assessment Survey may also be adapted for use in any small organization's planning process, though. If you don't have A/V materials in your digital project's future, please still feel free to use the Self-Assessment Survey to guide your work.

The key activities are expanded with more detail in the Audiovisual Digital Readiness Self-Assessment Survey than what you'll find in the Focus Area sections of the main Toolkit. They cover the same ground but more carefully, so that your organization can fully assess its place in the Digital Readiness Levels. If you're looking for key activities that are broken out into more process steps, the Self-Assessment is the place to look.

At the end of the Toolkit, you'll find several printable worksheets. We recommend starting with the [Digital Project Planning Worksheet](#), which will help you plot out the steps needed for any project.

Searching and finding

Looking for a specific topic? Use the search function in this eBook to find a particular word or phrase, or skim the Table of Contents in the left sidebar for subject areas. If you use the search function and go to one of the results pages, press **Control + F (Windows)** or **Command + F (Mac)** to find the term on the resulting page.

Using the Digital Readiness Resources: A Hypothetical Scenario

Organization A has a collection of 500 VHS tapes documenting their organization's history. They aren't sure of the copyright of some of the tapes. They would like to digitize the tapes and make them available for streaming online. They aren't sure where to get the equipment to do so, and don't know what file type they should use, since video files are so large. They aren't sure how to provide online access to the files since they don't have a budget for a digital asset management system. They decide to use the Audiovisual Digital Readiness Self-Assessment Survey to help them figure out where to start.

Organization A goes through the self-assessment and determines that they are at Bronze level in Focus Area: Plan and Prioritize, because they have not completed the recommended Key Activity "create an item level inventory." They determine they are at Bronze in Focus Area: Store and Maintain, because they have not completed the key activities "determine where digital collections are stored" or "create an inventory to track digital collections." They determine they are a Bronze in Focus Area: Digitize, because they have not completed the recommended step "digitize your most fragile and unique A/V assets."

After the self-assessment, Organization A determines that they need an item-level inventory of the collection before they can digitize. They call their project the VHS Inventory Project. They use the Toolkit's Project Planning Worksheet to plan out how to create the inventory. They use the collection inventory template in the Toolkit to create an outline for the inventory. They attend the online community of practice webinars and present the VHS Inventory Project to the community. During the webinar, they meet another local organization with a large meeting room where a workshop could take place. The two organizations decide to hold a local Collection Inventory Day in the workshop space to complete the VHS Inventory Project together. Organization A completes the inventory of all 500 tapes. They review their Digital Readiness Levels, check off the Key Activities completed, and determine that they are now at Silver level in a focus area. They review their priority projects from the Pathway to Digital Readiness Plan and decide to work on developing a plan for digital storage over the next six months. They call the project the Digital Storage Planning Project and the process begins again.

But Where Do I Start?

One of the most common questions we get is "How do I get started on a digital project?" This work can feel overwhelming, even when broken down into manageable steps. We recommend starting small, building partnerships, and connecting with peer organizations as you go.

To that end, we asked some of our partners to complete the sentence "If I could do it all over again, I would..."

- Tackle a smaller group of materials at first
- Make sure two people started the project at the same time so we could help each other
- Start with a clearer plan
- Take the time to sort and research the physical collection before digitizing

- Have firm deadlines to help me stay on track

We hope this comprehensive Toolkit will provide you with the guidance, reassurance wisdom, resources, and direction needed to accomplish your digital projects goals!

Digital Readiness Levels

The Digital Readiness Levels are a structured roadmap for public history organizations to plan and sustainably grow their digital initiatives in order to improve access to collections.

Focus Area	Bronze	Silver	Gold
	<i>Laying a strong foundation</i>	<i>Putting it into practice</i>	<i>Refining and sustaining</i>
Plan and Prioritize	Set goals for digital work that fit the organization's mission and policies. Adopt a digital mission statement or revise existing mission statement to include digital work.	Identify and prioritize potential digital projects. Make a digital project plan that includes roles, activities, required resources and partners.	Adopt a digital collection development policy or revise existing policy to include digitized and born digital content.
Obtain Permissions	Create and use permission forms and donor agreements that include specific language for the use of digitized and born digital content or modify existing forms.	Evaluate copyright status of content. Identify items with access restrictions or concerns, including privacy, ethical, or cultural considerations.	Assign standardized rights statements or Creative Commons licenses for collection items. Adopt a takedown policy and, if applicable, a statement on harmful content.
Digitize	Determine standards and procedures to be used to digitize physical materials or process born digital content.	Using identified standards, undertake digitization or born-digital processing work either in-house or with an appropriate vendor or partner.	Use a quality control checklist to review content and confirm it meets identified standards.
Describe	Adopt a consistent naming convention for digital files. Determine standards to be used to describe digital content.	Using identified standards, create basic descriptive metadata for terms.	Develop a data dictionary and use controlled vocabularies to standardize metadata.
Share	Review goals and options for providing access to content. Choose an access platform or system that meets identified needs.	Make items and associated descriptive information available for discovery and repurposing.	Implement techniques to support accessibility of online content, including alt text, transcripts, and other best practices.
Store and Maintain	Create and maintain a collection-level inventory of digital content.	Store at least two, preferably three, copies of each primary file and related metadata, with one copy stored off-site. Check and refresh storage media on a regular schedule.	Plan for future storage needs. Use software tools to check file integrity.
Evaluate	Identify primary users and ways to engage them with digital content.	Collect data and stories about how digital content is stored.	Use collected data and stories to inform future collection development, outreach, and programming. Share knowledge with other practitioners to build community around digital work.

PART I

FOCUS AREAS

CHAPTER 1

Focus Area 1: Plan and Prioritize

Digital work can be more complex and take more time than you may expect. It's helpful to start small, set realistic goals, and define roles and tasks in advance. **In other words, develop a plan to guide your work.**

PLAN AND PRIORITIZE: BRONZE LEVEL

Key Activities

- Articulate your organization's goals for digital work.
- Develop a digital mission statement.
- Assess collections and prioritize potential digital projects.

For audiovisual materials:

- Create an item-level inventory of analog and digital A/V materials.
 - Identify the most fragile and unique A/V assets in your collections.
 - Assess and document your organization's strengths and weaknesses in caring for digital A/V collections.
-

Why Digitize?

We recommend asking the big question before you start any digital work: Why? What results do you want to see? How will this work advance your organization's mission? How will it serve the needs of your community?

Goals for digitization projects might include:

- Improve internal **access** and intellectual control, such as by creating an inventory
- Improve public access to frequently-used items
- Improve public access to "hidden" or inaccessible items
- Reduce wear and tear on frequently-used items
- Protect fragile or at-risk items
- Migrate **analog** formats that will become obsolete and inaccessible
- Generate revenue, such as by selling reproductions
- Showcase a representative sample of collection items
- Use in exhibits, presentations, or other programming

- Support teaching and research

Define a Digital Mission Statement

An **organizational mission statement** is a brief statement that communicates your organization's purpose and reason for existing. Likewise, a **digital mission statement** articulates the purpose and goals of your organization's digital work. This statement should be short (no more than a few sentences) and closely tied to your organization's overarching mission. Starting with a strong digital mission statement will help others understand the value of your digitization program and how it fits in with the larger goals of your organization or community.

Digital Mission Statement Examples

[Huna Heritage Foundation: Why We Digitize](#)

"Huna Heritage Foundation recognizes that the materials held within the Library & Archives represent a collective memory for the Xúna Kaawu and Hoonah community. As stewards of cultural and historical record we find inestimable value in digitizing our collection."

[Appleton Public Library Digital Preservation Policy](#)

"By preserving the digital collections at Appleton Public Library, the library enriches its community by safeguarding the material and keeping it in an accessible and authentic format for future generations."

[University of Wisconsin-Parkside Archives Digital Collection Mission Statement](#)

"The Digital Collections Center at the University of Wisconsin-Parkside Archives and Area Research Center creates digital collections and makes them available: to increase access to its holdings beyond the constraints of time and distance; to enhance faculty and student scholarship and research; to encourage local history and genealogical research in Wisconsin and beyond; and to preserve and provide access to fragile historical materials of Racine and Kenosha Counties."

Prioritize Content for Digitization

Thoughtfully selecting the materials you'll digitize will help keep your project manageable and help you make the best use of limited resources. Revisit your digital mission statement and make sure you select materials that will support your goals. For example, if your goal is to generate revenue by selling photo reproductions, choose items with broad appeal and without copyright or privacy concerns. If your goal is to create educational resources for local teachers, talk to them to find out what types of materials they need.

Considerations for prioritizing digitization projects

- Is there interest or value in these materials for genealogists, educators, researchers, community members, or other identified audiences?
- Do the materials contribute new voices or perspectives to the historical record (for example, materials document historically underrepresented groups in our community)?
- Is there enough information available to add useful context (we know or can find out names of people, locations, dates)?
- Are the materials unique and not already available online?
- Are there privacy, ethical, or copyright issues known about the materials?
- Are the materials in high-risk, deteriorating formats, particularly audiovisual recordings on media like audiocassettes, VHS tapes, CDs, or DVDs?

Create an Item-Level Inventory of A/V Collections to Prioritize for Digitization

By and large, digitizing an original resource does not replace the need for the proper conservation, care, and storage of that original resource. A big exception to that rule is audiovisual materials in outdated formats — digiti-

zation is considered the best way to preserve and play back these deteriorating resources. And the situation is urgent. In 2012, the [Library of Congress National Recording Preservation Plan](#) reported that “many endangered analog formats must be digitized within the next 15 or 20 years before further degradation makes preservation efforts all but impossible.” **If you have audio cassettes, reel-to-reel tapes, microcassettes, video formats such as VHS, Betamax, U-Matic, Mini-DV, Hi8 or Digital8 camcorder tapes in your collections, consider making those your top priority.**

But what if your A/V materials are not cataloged or are no longer playable? How can you know what to prioritize if you don't know what you have? Creating an item-level inventory of your A/V collections is crucial to the process of digitizing such collections. CAW has worked with Recollection Wisconsin and other partners to develop an audiovisual inventory form with accompanying instructions. Refer to [Appendix C: Audiovisual Collection Inventory and Instructions](#) for more information.

Identify the Most Fragile and Unique A/V Assets in Your Collections

Members of the Community Archiving Workshop developed a method of prioritizing preservation needs for the Smithsonian Institution in 2019 as part of the [Audiovisual Preservation Readiness Assessment Project \(AVPRA\)](#). It was used to assist units within the Smithsonian in making preservation decisions for audiovisual collections. It specifically addresses audiovisual formats, but can be adapted for use in paper, photographic, and other collection types. If your organization is seeking guidance on which formats to prioritize for preservation, we recommend consulting [Appendix A: Create a Preservation Prioritization Plan](#).

Assess Strengths and Weaknesses in Caring for A/V Collections

Because digitizing audiovisual materials require more and different equipment, metadata, time and other considerations, the Community Archiving Workshop has created a self-assessment tool for your organization to examine its A/V collections. If you plan to digitize an A/V collection, we recommend starting with the [self-assessment worksheet](#).

Bronze Level: Resources and Tools

["So You Think You Want To Digitize."](#) Wisconsin Historical Society, 2017.

Christen, Kim, Jennifer O'Neal, and Lotus Norton-Wisla. ["Strategic Digitization Goals Part 1: Digitization Purpose Statement Worksheet."](#) Sustainable Heritage Network, 2020.

["Selecting Materials for Scanning."](#) North Carolina Digital Heritage Center.

PLAN AND PRIORITIZE: SILVER LEVEL

Key Activities

- Create a detailed plan for a high-priority digital project.
 - Determine if your project will be completed in-house, by a vendor, or a combination.
 - Determine resources needed to support your project plan.
 - Identify roles and responsibilities, who might fill them and if you will need new staff or volunteers.
 - Get input from partners as you develop the plan.
-

Develop a Project Plan

Use the [Digital Project Planning Worksheet](#) to outline your project before you get started. You can also use this worksheet to keep a record of decisions and changes made during your project, so others can take up the work if a staff member or volunteer moves on. We're big fans of documentation. Write it down now, you'll thank yourself later!

Determine Needed Resources

What resources are needed to move your priority projects forward? Factor in one-time costs such as equipment purchases as well as ongoing expenses to maintain a digital project, such as storage costs or software upgrades. Many digitization projects are made possible by grants from federal, state, or local sources. At the local level, consider funding opportunities such as your county's arts and humanities board, your Chamber of Commerce, or locally-owned corporations.

Resources needed for a digital project may include:

- Paid staff members to do digitization work
- Paid staff members to train or supervise volunteers or interns
- Intern stipends or honoraria
- Digitization vendor fees
- Travel or shipping costs to transfer materials to and from vendor
- Training opportunities such as webinars or workshops
- Scanner, digital camera, audio or video recording equipment
- Software for processing digital files (image editing, OCR, etc.)
- Software for online access
- Dedicated space for digitization work, including a desk/table and stable Internet connection
- Cloud storage for digital files (Google Drive, Dropbox, Microsoft One Drive, etc.)
- Local storage for digital files (server, external hard drives, RAID devices, etc.)

Keep in mind that the biggest investment needed for digital work is typically not money, it's time — the many

hours that staff or volunteers spend learning new skills and procedures, creating digital images and metadata, and maintaining the digital content.

Looking Ahead to Ongoing Preservation: Digital Preservation

Digital preservation is not only about storing and maintaining multiple copies of digital files. It's the set of ongoing activities, plans, and resource commitments that will help keep your digital content available and usable in the coming months, years, and decades. You do not need to adopt a digital preservation plan or policy in order to successfully store and maintain your content, but as your digital collections grow, undertaking digital preservation planning will help your organization protect past investments and plan for the future.

Digital preservation is often described as a three-legged stool¹. One leg of the stool is **technology** – that's the hardware and software you use for storing and managing your content. Another leg is the **organization** – this leg includes the policies, procedures, and documentation put in place to make digital preservation a part of your organization's regular operations. The third leg of the stool is **resources** – the budget allocations, staff skills development, and other institutional commitments necessary to sustain digital preservation activities. All three legs of the stool need to be equally strong and stable in order to stand up.



As your digital program matures, consider these foundational resources to get started with digital preservation planning at your organization:

- [“Digital Preservation Peer Assessment.”](#) Northeast Document Conservation Center, 2019
- [“Getting Started,”](#) Digital Preservation Handbook, Digital Preservation Coalition
- [Digital POWRR](#) webinar series, 2016

Develop a Project Budget

Sample project scenario:

We're a volunteer-run historic house museum with a collection of about 500 black-and-white photographs we'd like to digitize. We have a volunteer interested in doing the scanning, and we're going to hire a summer intern from the local community college to help with researching copyright and creating metadata. We'll partner with our local public library to borrow a digitization kit through our regional library system and work with the library to host our collection in our state's DPLA hub. We'll store two copies of our primary files on external hard drives, one stored here at the museum and one at the regional library system office.

¹. Kenney, Anne and Nancy McGovern, “Digital Preservation Management: Implementing short-term strategies for long-term problems,” Cornell University/Inter-university Consortium for Political and Social Research, 2003-2006, <https://dpworkshop.org>

SAMPLE PROJECT BUDGET

Resource	Notes	Cost
Skills and Knowledge (training, guidelines, technical standards)	Need training on digitization procedures and equipment	State DPLA hub: \$0 Paid training courses vary in price, \$50-\$250
People (staff, volunteers, interns, vendors)	For interns, estimate \$15/hour for 120 total hours	Volunteers: \$0 Paid work: \$1800
Hardware (scanner, digital camera, computer)	Borrow public library digitization kit	\$0
Software (for online access, image editing, text recognition)	Online access: hosting through state DPLA hub	\$200 setup fee \$125/year
Storage (server, cloud storage, external hard drives)	2 external hard drives (1 TB each)	\$200

Working with Volunteers

Many local history organizations rely heavily on dedicated volunteers to perform a range of digital collections development work. A successful volunteer program needs a plan for attracting, training, supporting, and recognizing volunteers. Volunteers may come to your organization to donate their time and experience, but it's important to keep in mind that it's not what they can do for you that keeps them coming back, it's what you can do for and with them to foster a positive environment and sense of community.

Planning a Community Archiving Workshop for Audiovisual Materials

Your organization may want to jump-start your A/V digitization and preservation work by planning and hosting a Community Archiving Workshop (CAW).

In a CAW, experienced audiovisual archivists partner with volunteers and staff at a community archives or museum. During a day-long workshop, the professional archivists provide training and equipment while the participants gain hands-on experience assessing and cataloging A/V materials.

The aim of a CAW is to learn, have fun, build connections, and do productive work to begin preserving collections that include at-risk audio, video or film. The Community Archiving Workshop model is flexible and can be adapted to meet your organization's collections, needs and resources. The most common result of a day-long CAW is a prioritized inventory for all or part of a collection which can serve as the foundation for future preservation and access planning.

For more information on planning a workshop, see the [Community Archiving Workshop Handbook](#).

Silver Level: Resources and Tools

[Digitization Cost Calculator](#), Digital Library Federation.

Salo, Dorothea. ["Those Two Boxes of Tapes,"](#) Appleton Public Library Digital Readiness Fair (Recollection Wisconsin), 2021.

Northeast Document Conservation Center. [Fundamentals of A/V Preservation](#), especially Chapter 2, Section 3, "Prioritization for Digitization."

Community Archiving Workshop, ["Community Archiving Workshop Handbook."](#)

PLAN AND PRIORITIZE: GOLD LEVEL

Key Activities

- Gather ideas and examples of digital collection development policies that include both born-digital and digitized analog collections.
 - Draft a digital collection development policy and obtain feedback from stakeholders.
 - Finalize and adopt the policy.
-

Establish a Digital Collection Development Policy

Think about how digital projects fit into your organization's **collection development policy**. A collection development policy outlines the types of materials your organization will collect and care for. It typically identifies the subject matter, geographic locations, time periods, type or formats of materials, and other factors that influence collecting decisions. If your organization already has a collection development policy in place, consider revising it to include digital content.

A Digital Collection Development policy typically includes:

- An overview of the organization's mission, values, goals, and/or collecting strengths
- Subject areas, types or formats, geographic areas, and other factors that determine the types of donations you will or won't accept
- How you will select materials to accept digitally or choose analog materials to digitize
- Date the policy is adopted
- Last date the policy is reviewed or approved

Digital Collection Development Policy Examples

[Recollection Wisconsin Service Hub Collection Policy](#)

[La Crosse Public Library Archives Digital Collections Development Policy](#)

[Colorado State Universities Library Digital Collection Development Policy](#)

Legacy Projects

Some of us have the luxury of building a digitization project or program from scratch. Others, though, take on digital projects that were started by long-gone staff or volunteers, sometimes years or even decades prior to our own participation, and with scant meaningful documentation to help decipher the project work.

Some advice for wrangling an inherited project (or restarting a stalled one):

- **Gather your documentation.** Look for a mission statement, collection development policy, a grant proposal, a digital preservation policy, a project plan or budget, training manuals, emails or other communications related to the digital project – any documentation that might shed light on the work.
- **Talk to people.** Connect with current and former staff and volunteers. Find out as much information as possible about the project – its origins and history, successes, challenges, cost, staffing, expertise required to continue the work, and more. Document these conversations.
- **Don't delete anything (yet).** Be careful not to delete images, data, or documentation that might be

needed as part of the project or to inform your decision-making process. Save project-related materials until you know what they are and whether they should be retained.

Gold Level: Resources and Tools

Norton-Wisla, Lotus. "[Collections Development Policy Worksheet](#)." Sustainable Heritage Network, July 2020.

State Archives of North Carolina. "[Policies](#)." [Video] YouTube, March 2021.

CHAPTER 2

Focus Area 2: Obtain Permission

Determining the copyright status of the digital materials you will make available online can seem daunting, but there are tools available to help you assess your organization's risks and responsibilities. Before you get started, think about the following:

- Owning a physical item does not necessarily mean you hold the copyright to that item.
- Digitizing an item does not change its copyright status or create a new copyright.
- Regardless of copyright status, there may be ethical and privacy considerations about how items are displayed or used.

OBTAIN PERMISSIONS: BRONZE LEVEL

Key Activities

- Adopt a deed of gift form that includes language about online access to digitized and born-digital streaming content, downloading, and re-use (or update existing deed of gift form).

- If creating new digital content, such as oral history interviews, use a permission form that includes language about online access (or update existing permission form).

Donor Agreements

Does your **deed of gift form** include specific language about digitizing and sharing donated items online? Be aware that a donor can transfer **copyright** to you with a donation only if they are the copyright holder.

If you don't already use a deed of gift form, donor agreement, or gift agreement, now is a great time to adopt one. Now is also a good time to dig through your files, physical and digital, to find existing documentation that will shed any light on the status of permissions or agreements in your collections. Did past archivists, volunteers, or donors contribute notes or forms documenting how materials could be used or shared in the future?

Forms and other documentation should be kept with the related collection materials, either physically or digitally. For instance, you could save a signed donor agreement in a "Copyright" subfolder in the collection to which it applies. You can also write out the information you have in a text file and save it with the collection or the digital materials.

"Digital donations," in which cultural heritage organizations scan photos, scrapbooks or other materials for community members and keep the digital files but return the originals to the owner, are becoming more common. So

are **crowdsourced** or community-sourced collections, in which community members contribute their own writings or artwork to a shared digital collection. A signed deed of gift or permission form is needed in these scenarios too.

While we can't give you legal advice on collection donations, below are several examples you can borrow from and customize for your needs.

Deed of Gift Examples

[Deed of Gift](#), Wisconsin Historical Society

[Loan for Digitization Purposes](#), Rock County Historical Society (Janesville, Wisconsin)

[Sample Deed of Gift](#), Sustainable Heritage Network

Permission Forms

A permission form, also known as a release form or consent form, is needed whenever your organization works with community members to create new content, such as oral history interviews. Any permission forms should clearly state how (or if) the materials may be shared online and how copyright will be retained or transferred, if applicable.

Permission Form Examples

[Oral History Permission Forms](#), Wisconsin Historical Society, Wisconsin Veterans Museum, and UW-Madison Archives Oral History Program

[Registration Form](#), Palos Verdes Library District Local History Center (California)

[Oral History Interview Release Form](#), Door County Speaks, Door County Library

Bronze Level: Resources and Tools

"[A Guide to Deeds of Gift](#)." Society of American Archivists, 2013.

"[Gift Agreements](#)." Community-Driven Archives, University of North Carolina at Chapel Hill, 2021.

Norton-Wisla, Lotus. "[Donor Form and Deed of Gift Worksheet](#)." Sustainable Heritage Network, 2020.

OBTAIN PERMISSIONS: SILVER LEVEL

Key Activities

- Gather existing documentation that may inform copyright and permissions: deeds of gift, donor permission forms, or correspondence with donors.
- Identify items not covered by copyright (in the public domain).
- Identify items potentially covered by copyright and make determinations about appropriate access.
- Review items to determine whether privacy, ethical, or cultural considerations will determine appropriate access.

Public Domain

Many of the historical materials in your collections may be in the **public domain**, which means that copyright protections do not apply¹. Materials in the public domain may be freely used by anyone, for any use, without

¹. "Welcome to the Public Domain." Stanford Libraries. <https://fairuse.stanford.edu/overview/public-domain/welcome/>

permission or attribution. In addition, whether the materials are in the public domain or in copyright, any digital resources you make available online can be used by the general public for activities defined as Fair Use by Section 107, United States copyright law, including teaching, research, and news reporting².

What's in the Public Domain?

More than you might think! To figure it out, you'll need to know whether an item is considered published or unpublished, and, if possible, the date it was created.

Published works include:

- Books and booklets
- Brochures and pamphlets
- City directories and phone books
- Maps
- Newspapers and newspaper clippings
- Postcards **without** writing on the back
- Yearbooks
- Commercially released films in all genres (for example: fiction, documentary, educational)
- Broadcast television and radio (local and national programming, such as tv news and sitcoms)
- Commercially released music and audio recordings

COPYRIGHT ASSESSMENT FOR PUBLISHED WORKS

If the publication date is...	Copyright status is...
1978 or after	In copyright
1928-1977 with a copyright notice (© or "Copyright")	May be in copyright
1928-1977 without a copyright notice	No copyright (public domain)
1928** or before	No copyright (public domain)

***In 2024. This is a rolling date! Each year on January 1, another year of published content passes into the public domain.*

Unpublished works include:

- Architectural drawings
- Diaries
- Ephemera
- Letters
- Manuscripts
- Photographs (unless you are sure they were published)
- Postcards with writing on the back
- Home movies

2. "Fair Use," Stanford Libraries. <https://fairuse.stanford.edu/overview/fair-use/>

- Amateur footage
- Audiovisual outtake material (material created in the process of making a published film, video, or audio production but not used in the final product)

COPYRIGHT ASSESSMENT FOR UNPUBLISHED WORKS

If creator is...	Copyright term is...	In 2024, it's in the public domain if...
Known	70 years after death of creator	Creator died before 1954
Unknown	120 years after date created	Created before 1904

Unpublished items that are simply a collection of facts generally do not need to be assessed and can be considered public domain. These include items such as ledgers and account books, land records, tax records, deeds, invoices, receipts, bills, and permits³.

In Copyright? Get Permission!

If materials are not in the public domain, seek permission from the copyright holder to put them online. Copyright may lie with the original photographer, artist, or author; their heirs (if legally transferred through a will, for instance); or, in the case of works for hire, with the agency that authorized the creation of the original work (for example, the copyright to an image from a staff photographer working for a newspaper or magazine would, in most cases, belong to the newspaper or magazine publisher). Keep a record of when you contacted rights holders and what response (or lack of response) you received.

Remember, libraries and archives have the right to preserve materials, regardless of copyright status, under 17 USC § 108 of United States copyright law⁴. This provision explicitly allows libraries and archives to make up to three copies of a work for preservation purposes. The items being preserved can be in any format (text, images, sound, etc.). Furthermore, the copies can be digital, so long as they are not distributed digitally nor made available to the public in a digital format outside the premises of the library or archives. In other words, you have the right to digitize an in-copyright work, as long as you don't put it online or make it available outside your library or archives without the permission of the copyright holder.

Orphan Works

What if I can't find the rights holder? Or what if I get no response after multiple attempts to contact them? It may be impossible to identify or locate the rights holder for many historical materials. In that case, the materials are considered **orphan works**⁵. Many libraries and museums choose to make orphan works in their collections available online.

Orphan works are a particularly common issue with published audiovisual materials, including local films, educational films, or documentaries made by companies that no longer exist. The U.S. Copyright office has deemed that with a "good faith" qualifying search, these kinds of materials can be made accessible, and if a copyright owner comes forward after that point there are specific steps to be taken (outlined in the "Notice of Claim Infringement" section on page 62 of [this document](#)).

3. "Rights Statement Review Criteria." North Carolina Digital Heritage Center. https://docs.google.com/document/d/1HBB_BTfVrg8412_2bxu7afp7t5fAmTyw5lhoLxSTR6I/edit?usp=sharing

4. "Legal and Ethical Considerations for Providing Access to Born-Digital Collections: Copyright." Digital Library Federation.

5. "Orphan Works," United States Copyright Office. <https://www.copyright.gov/orphan/>

When weighing your decision to make orphan works from your collection available online, keep in mind that making materials that may be in copyright available for free puts your library or archives at less risk than charging a reproduction fee, selling copies, or otherwise making money from those same materials.

Privacy and Ethics

Even if materials are in the public domain, there may be other reasons not to share them publicly, online or otherwise. Be mindful of privacy issues and other ethical concerns, which are different from copyright issues.

Give special consideration before providing access to:

- Materials created by or depicting Indigenous communities
- Materials created by or depicting protected or vulnerable populations, such as minors, incarcerated individuals, or medical patients
- Materials containing personal or private information (e.g. home address, birth date, medical history)
- Materials depicting emergency response, crime scenes, or disaster relief efforts that may include images of wounded or deceased people
- Materials created by families who may never have intended them to be publicly available (e.g. home movies with unidentified creators)

Proceed carefully with any of these types of materials. In the case of Indigenous materials, try to contact representatives of the Native Nations to open a dialogue about the materials to be digitized. *The Protocols for Native American Archival Materials* provide a guide to such dialogues⁶. It may also be appropriate to discuss **digital return** of Indigenous materials to their communities. Digital return is the transfer of **cultural heritage** materials back to a community in high-quality digital form⁷.

Anticipating Re-Use Inquiries

Once you make collection material available online, you may get requests from users regarding permission to publish or re-use material creatively in their own research and projects. Maintaining documentation of any copyright research that has been done on the objects, and even better, publishing that information online alongside the digital content, will help in these situations. Many users will benefit from an understanding of [Fair Use](#) in U.S. copyright law to assess their situation.

6. "Protocols for Native American Archival Materials," Northern Arizona University. <https://www2.nau.edu/libnap-p/protocols.html>

7. Christen, Kim, and Lotus Norton-Wisla. "Digital Return Slides." Sustainable Heritage Network, 2020. <https://sustainableheritagenetwork.org/digital-heritage/digital-return-slides>

Silver Level: Resources and Tools

[The Copyright Genie](#). American Library Association, 2012.

[Copyright Term and the Public Domain in the United States](#). Copyright Information Center, Cornell University, 2022.

["Sample Written Request for Permission,"](#) University of Texas Libraries.

["Orphan Works: Statement of Best Practices,"](#) Society of American Archivists 2009.

["Well-intentioned practice for putting digitized collections of unpublished materials online,"](#) OCLC Research, 2010.

Hirtle, Peter. [Digital Preservation and Copyright](#). Stanford Libraries Copyright and Fair Use, 2003.

[Fair Use and California Revealed](#). Gretchen McCord, 2016.

[Copyright at Harvard Library, Fair Use](#). Harvard Library, 2018.

[California Revealed Permissions Guidelines](#). California Revealed, 2019.

OBTAIN PERMISSIONS: GOLD LEVEL

Key Activities

- Use standardized rights statements or Creative Commons licenses to describe the copyright status of digital items.
 - Develop a takedown policy.
 - Develop a statement or notice about potentially harmful content.
-

Rights Statements

Each item you make available online should be accompanied by a statement describing the item's copyright status. This **rights statement** helps users understand what they legally can and cannot do with your materials. We recommend using one of the twelve standardized rights statements from [RightsStatements.org](https://rightsstatements.org), which provides a consistently-worded explanation of the copyright and reuse status of your digital items.

Creative Commons Licenses

If you're creating new digital content, you might consider assigning a Creative Commons license to your work. Creative Commons (CC) licenses are a standardized, widely used method for people and organizations to grant copyright permissions for their creative and academic works, ensuring proper attribution and allowing others to make use of those works.

Note that Creative Commons licenses can only be applied by the rights holder. If your organization does not hold the copyright to materials, then you cannot apply a license to those materials, but you can encourage the rights holder to do so. You might even consider including CC license options in your deed of gift or permission forms. To see an example of what a Creative Commons license looks like in use, just flip to the front of this Toolkit! The entire Digital Readiness Toolkit is available for reuse and adaptation as long as the original is credited, also known as a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

Takedown Policies

After doing the legwork to assess copyright and pursue permissions, you might still have some uncertainty about the rights status of some materials. The **Digital Millennium Copyright Act** (DMCA) of 1998 established a notice-and-takedown system, which means that if you infringe on copyright by posting copyrighted material online without permission, the rights holder has to follow a specific procedure to notify you and give you the chance to remove the copyrighted item. A good practice is to post a takedown policy on your organization's web page or digital collections site, so that the process for submitting a takedown notice is clear to any rights holders.

A takedown policy includes:

- The procedure a rights holder can use to submit a takedown notice
- A brief outline of what your organization will do if a takedown notice is received
- Your organization's contact information

Takedown Policy Examples

[Notice and Takedown Policy](#), University of California San Diego Library Digital Collections

[Digital Archive Takedown Policy](#), University of Nevada Reno Libraries

Harmful Content Statements

A **content statement** is a message on your digital collection website or within your collection metadata that alerts users to materials they may find offensive, triggering, or harmful. Without mediation or interpretation, this content might be taken out of context or worse, inflict irreparable harm on unsuspecting users. The goal of a content statement is not to deter users, but to prepare them, especially younger learners and their educators, for content they might encounter.

Harmful Content Statement Examples

[Digitized Archival And Special Collections: Potentially Offensive Materials](#), University of Wisconsin-Milwaukee Libraries

[DPLA's Statement on Potentially Harmful Content](#), Digital Public Library of America

[Listening to War: Wisconsin's Wartime Oral Histories](#), Recollection Wisconsin

Gold Level: Resources and Tools

[Rights Review: An approach to applying Rights Statements from RightsStatements.org](#). Minnesota Digital Library, 2020.

"[Guide to Implementing Rights Statements](#)." Society of American Archivists, 2016.

[License Chooser](#). Creative Commons. *This tool can help you determine which license is appropriate for your digital materials.*

CHAPTER 3

Focus Area 3: Digitize

Digitization is the process of making a digital copy of a physical object — for instance, scanning a document, using a digital camera to photograph an artifact, or **converting** an audiocassette into a WAV file. Another common term for this process is **reformatting**.

Your goal here is to create a digital file that accurately represents the original item, using recognized standards that will keep the file usable for years to come. Keep in mind that this digital file will need ongoing care and storage, just as proper care and storage is still needed for the original physical object.

Because A/V preservation is an evolving process, the general recommendation is to keep physical materials as new technology or processes may emerge that would allow collections to benefit from another pass at digitization, if it is still possible. (See the [Store and Maintain section of the Toolkit](#) for more on caring for your digital files).

DIGITIZE: BRONZE LEVEL

Key Activities

- Identify the resolution, color, bit depth, file format, and other standards you will use to digitize materials.
- Choose equipment for reformatting, identify partnerships, or select an appropriate vendor.

For A/V materials:

Identify the sample rate, bit rate, codec, wrapper, and other standards you will adopt for digitized materials.

Digitization Standards

When digitizing, aim for a “capture once, use many times” approach. Get the best quality you can the first time around; don’t anticipate going back to re-digitize down the road. A high-quality primary file can be copied, edited, or resized as needed for all kinds of future uses.

So what quality do you need? There is no one-size fits all specification — the standards you’ll use will depend on the size and type of the original materials. The table below outlines the generally recommended minimum standards to use for **resolution**, **color**, **bit depth**, and **file format** when digitizing common formats, including documents, images, audio, and video¹.

¹. Table adapted from “Digitization Standards and Guidelines,” University of California Santa Cruz Library. <https://guides.library.ucsc.edu/DS/Resources/DigitizationStandards>

Last play?

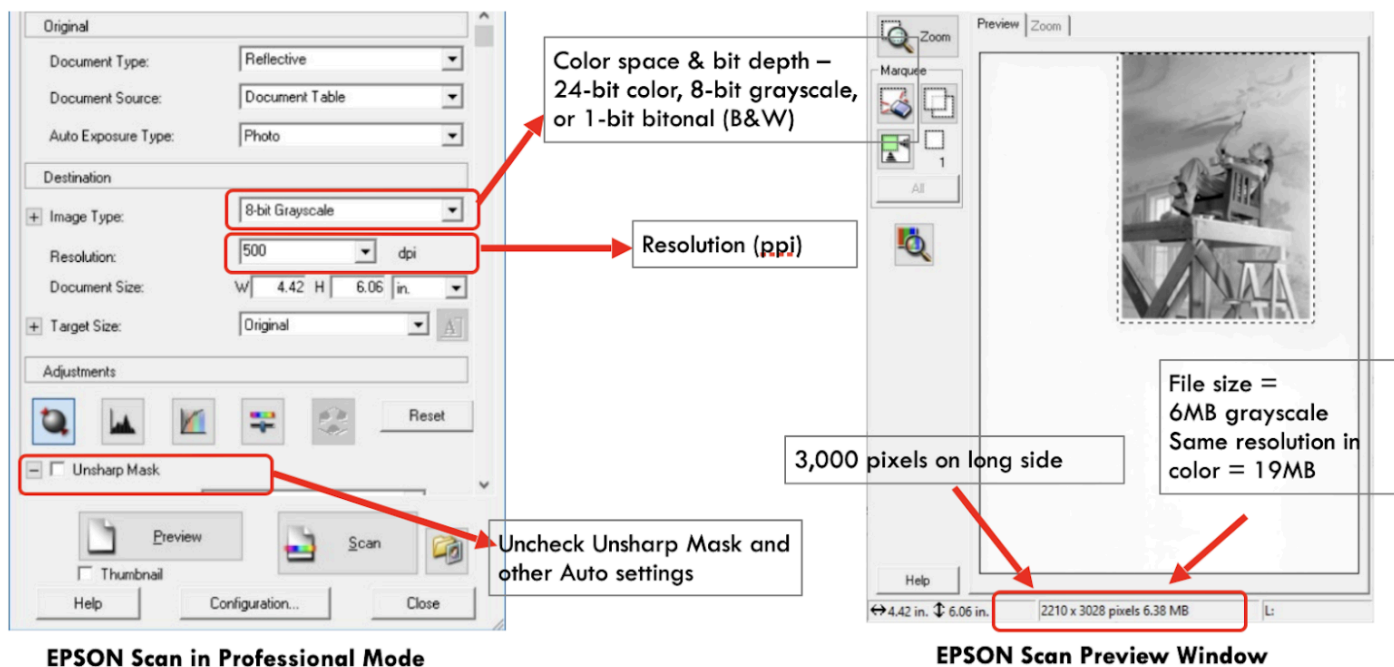
If you're considering digitizing an audiovisual recording, keep this in mind: the digitization stage may be the last opportunity to play it back, either because the equipment used to play the recording may be obsolete (or nearly so), or because the medium itself may be fragile, decaying, or at risk of damage during digitization. You should consult with an A/V professional before viewing or listening to media that you suspect may be at high risk. The goal is to get the best signal from the item, and to use a file format that captures the highest quality possible. However, an organization must also consider using a file format that they can play back in the future and consider a file size that is possible for them to store with their existing or future storage capabilities. Once a preservation file is created, the organization can produce derivative files that are better suited for streaming or downloading from the preservation file.

Preferred file formats and digitization standards

The table below describes recommended resolution, bit depth, and file formats for several commonly-used materials. We have adjusted the recommendations to be achievable by an under-resourced cultural heritage organization and still meet the requirements of high-quality digital files. The *minimum* options will give you usable files, but the *ideal* options will create files that can be stored for the long term and edited or adjusted at a later date. Several more resources are available for further reading in the Resources and Tools list at the end of this section.

Content Type	Resolution (PPI)	Color	Bit Depth	File Format/ Extension	Details
Books or other texts with no images	Min: 300 Ideal: 600	B & W or Grayscale	1 (bitonal) or 8	Min: PDF/A Ideal: TIFF	Optional Character Resolution (OCR) applications work best on documents scanned at 400 DPI or higher. Access files: PDF/A.
Books or other texts with images	Min: 300 Ideal: 400	Min: Grayscale Ideal: Color	Min: 8 Ideal: 24	TIFF	Optional Character Resolution (OCR) applications work best on documents scanned at 400 DPI or higher. Access files: PDF/A.
Manuscripts, letters, diaries	Min: 300 Ideal: 600	Color	Min: 8 Ideal: 24	TIFF	Aim for 3000-4000 pixels on the longest edge of the digital file.
Slides, film and negatives smaller than 4"x5"	Min: 1200 Ideal: 3000	Min: Grayscale Ideal: Color	Min: 16 Ideal: 24	TIFF	Aim for 3000-4000 pixels on the longest edge of the digital file.
Photos and prints smaller than 8"x10"	Min: 400 Ideal: 600	Min: Grayscale Ideal: Color	Min: 16 Ideal: 24	TIFF	Aim for 3000-4000 pixels on the longest edge of the digital file.
Photos, posters, and maps larger than 8"x10"	Min: 300 Ideal: 600	Min: Grayscale Ideal: Color	Min: 8 Ideal: 24	TIFF	Aim for 3000-4000 pixels on the longest edge of the digital file.
Audio	96 kHz		Sample rate: (recommended) 24-bit, 96kHz, (minimum) 24-bit, 48kHz	Broadcast wave (BWF), .wav or .aif	Access files: 320 Kbps sampling rate. File format: mp3 Codec: LPCM
Video (transferred from analog source)	720x486 4k		8-10 uncompressed Sample rate: (recommended) 24-bit, 48kHz, (minimum) 16-bit, 48kHz	.mov or .avi (Quicktime) MKV (Matroska)	Access files: 1.5 Mbps sampling rate. File format: mp4 h.264 Codec: Uncompressed 4:4:4:4 (motion picture film) Uncompressed 4:2:2 (video) Prores 4444 Codec (audio): PCM
Digital video	Native		Native, or 8-bit Sample rate: 16-bit, 48kHz	Native, .mov or .avi	Access files: 1.5 Mbps sampling rate. File format: mp4 h.264 Codec (Image): DV-NTSC (DV-25) Codec (audio): PCM
Motion picture film 35 mm film 8 or 16 mm film audio	4k (4096 pixels) 2k (2048 pixels)		10 bit RGB 24-bit, 48kHz	.DPX and .BWAV	Codec: uncompressed Codec: 24-bit, 48kHz Access files: use Video (transferred from analog source) line specifications above

Below is an example of how these settings might look in your scanner software, here shown in the Epson scanner settings.



Scanning specifications in Epson scanner software

The large, high resolution files that result from your scans and transfers are known as primary files, archival files, or **preservation files**. You can then save smaller versions of these primary files for editing and access purposes.

	Primary File (also known as an archival file or preservation file)	Access File (also known as a derivative)
Use For	Long-term storage, projection	Sharing on social media
	Selling reproductions	Emailing to researchers
	Printing, i.e. publications, calendars, posters, exhibit panels	Posting on your website
	Unedited for archival storage, color correction or restoration if required.	
File Type	Images and text: TIFF Motion picture film: .DPX and .BWA	Images and text: JPEG or PDF
File Size	Images and text: BIG! (one scanned postcard: ~20MB) 35mm film: ~4.3 TB/hr 16mm, 8mm, Super 8 film: ~765 GB/hr Audio: ~1 GB/hr	Images and text: Small (probably less than 1MB)
Editing	Unedited or minimal editing i.e. cropping or straightening A/V preservation files maintain discreet audio tracks (as many as 12!) and things like closed captioning	May be edited i.e. significant cropping, contrast adjustment, etc.

Choosing Equipment

Many small cultural heritage organizations choose to use a flatbed **scanner** (a scanner with a flat glass plate and a lid) as the most economical and easy-to-use method to digitize photographs, postcards, documents, and books.

Some things to keep in mind when choosing a scanner:

- Most entry-level flatbed scanners accommodate items up to 8" x 10." If you have oversized items, you may need to invest in a larger scanner, explore a copy stand and camera setup, or work with a partner

or vendor to scan larger items.

- If you have a large number of film negatives or 35mm slides to digitize, consider a flatbed scanner with film or slide trays, or a dedicated slide scanner.
- Not all consumer grade scanners can capture TIFF files – be sure yours does.
- Avoid using scanning “wands,” “scanner” apps on your smartphone, or similar devices. They’re great for researchers who want to get a quick reference image, but they won’t give you high-quality results.
- Do not use a sheet-fed scanner for any archival materials, as it can easily damage the originals.

Accessing Equipment for A/V Digitization

While many cultural heritage organizations have access to scanners for documents and photographs, it is less common for a small library, archive, or historical society to own the necessary equipment for digitizing film, video, audio, and other A/V materials. In many cases, you might not even know what equipment you need before you complete an [inventory](#) of your collection.

The [Memory Lab Network](#) is a project of the DC Public Library that provides resources for individuals and organizations wanting to digitize audiovisual formats around the United States. In particular, you might want to check out the detailed [list of equipment](#) used in the DCPL’s Memory Lab, and the [map](#) of existing digitization labs in the United States.

If you’re interested in purchasing digitization equipment for audiovisual collections, see [Appendix D: Guide to Equipment Needed for Audiovisual Digitization](#).

Should I re-scan?

We’ve heard from local history organizations who have inherited legacy projects in which images (sometimes many, many images!) have been scanned at lower quality than the organization would prefer – scans that were only saved as jpegs or at 150 dpi, for instance. The decision to rescan materials can be a difficult one. We recommend that your organization make that decision based on the goals of your digitization program. Are your images sufficient for access – can those jpegs be shared sufficiently, and is that “good enough” for what you want to accomplish? If you would like to sell reproductions of images and can’t do so with the files you have, then it may be worth taking the time to rescan to obtain a higher resolution image.

Working with a Vendor

Some materials such as large maps, books with fragile bindings, and analog audio or video present a reformatting challenge. If you don’t have the equipment, expertise or time to create high-quality digital copies yourself, consider outsourcing the digitization to a vendor.

Digitizing in-house means using your own equipment, staff, and expertise – and it usually means gaining a new skill set. Digitizing out of house means that you enlist a vendor’s existing equipment, labor and expertise. An organization may also use a combination approach, digitizing a sample of materials in-house and using a vendor for more decayed or rare materials. In [this webinar](#), Community Archiving Workshop members go over the benefits and drawbacks of each approach. See also [Appendix F: Working With An A/V Digitization Vendor](#).

Working with Born-Digital Content

Born-digital materials have never had a physical, analog form; they were created or “born” on a computer or mobile device. Collections of born-digital materials may come to you on an external hard drive, CD or DVD, or USB thumb drive. They might be delivered to you through a file sharing platform like Google Drive, or they may be copied or downloaded from the Internet. Your organization might create born-digital content such as video or audio oral history interviews, digital photos of local places or events, or newsletters and other publications. For guidance in this area, a good place to start is the book [The No-Nonsense Guide to Born-Digital Content](#) by Heather Ryan and Walker Sampson (2018).

Bronze Level: Resources and Tools

Grizzard, Eva, and Terrance D'Ambrosio. "[Digitizing for Preservation and Access: Best Practices for Every Budget.](#)" Sustainable Heritage Network, 2016.

[Minimum Digital Capture Recommendations.](#) Association for Library Collections and Technical Services / American Library Association, 2013.

"[Digitization: Technical Concepts.](#)" State Archives of North Carolina, 2021.

[Archiving Born-Digital Materials: Born-Digital Preservation Methods.](#) Emporia University.

Hix, Kelli, and Marie Lasco. "[CAW SW Webinar 4: Digitization Planning.](#)" Community Archiving Workshop, 2021.

[Guidelines: Motion Picture Film Scanning Projects.](#) Federal Agencies Digital Guidelines Initiative, 2014.

[Digital Preservation Handbook: File Formats and Standards.](#) Digital Preservation Coalition, 2023.

[Recommended Formats Statement.](#) Library of Congress, 2023-2024.

[Recommended File Formats for Digital Preservation.](#) Duke University Libraries.

[A short guide to choosing a digital format for video archiving masters.](#) SCART, 2014.

DIGITIZE: SILVER LEVEL

Key Activities

- Prepare physical materials for reformatting.
 - Complete a pilot project. Digitize a handful of items to check your settings and make sure the standards you identified will give you the results you want.
 - Document your workflow. Create a step-by-step outline of your digitization procedures.
-

Prepare Physical Materials for Reformatting

Review the materials to be **digitized** as a group and prepare them – perhaps in batches, depending on the size of the collection – to be scanned.

- Remove staples, paper clips, binder clips, or rubber bands (Watch out for sharp ends!)
- Remove items from binders or sleeves
- Review items for torn areas; place severely torn items in a plastic sleeve for scanning. Do not use tape or glue to repair items without consulting a professional conservator².
- Remove loose items like sticky notes

2. Rebecca Elder. "Preservation 101: Caring for Paper Based Materials," Sustainable Heritage Network. <https://sustainableheritagenetwork.org/digital-heritage/preservation-101-caring-paper-based-materials>

- Set aside any duplicate items
- If appropriate, organize the items in the order in which they will be scanned
- Keep separate any materials with mold or mildew; treat them to kill the mold or mildew before scanning³.
- If materials, especially photographs or slides, seem dusty, carefully use an air can or microfiber cleaning cloth to remove the dust⁴.
- Examine the glass scanner surface for fingerprints or dust, and wipe or dust off with a microfiber cloth as appropriate.

Tips for safe handling of original materials during digitization projects:

- No food or drinks near collection items
- No pens near collection items – pencil only
- Wash hands regularly; gloves are only recommended when handling photographic materials.
- Always have plenty of room in your workspace to accommodate the material you are working with
- Never use collection items as a work surface
- Do not stack different items together such as books and photos
- Return items to their storage area at the end of the day.

Tips for Scanning Photos and Documents

- Keep scanner glass clean and free of dust
- Use scanning software in “professional” mode
- Turn off all auto settings
- Scan one item at a time
- Use image editing software to crop after scanning, rather than letting the scanner auto-crop
- If there is writing or other information on the reverse side of a photograph, scan that too

Develop your Digitization Procedures

Before you dive into any project, take a test drive. Select a few representative items to scan and try multiple settings so you can be sure to get the results you want. For example, if you’re digitizing a yearbook collection, scan a couple of volumes from different decades to reflect different layouts, color vs. black and white photos, etc. If you’re working with a vendor, they should be able to reformat a handful of sample items so you can see their work before you move forward.

Based on what you learn in this pilot project, create a digitization workflow to document your process. A **workflow** is simply a sequence of connected, repeatable steps that lay out an activity from start to finish. As you digitize, update your written workflow with troubleshooting tips and changes to the workflow. Equipment availability changes, vendors change, and skills change, so having a living, adaptive workflow that is documented is key.

3. “Preparing for and Cleaning Mold on Paper Records,” Alabama Department of Archives and History. <https://fortherecordalabama.blog/2021/09/17/preparing-for-and-cleaning-mold-on-paper-records/>

4. Roemer, Christian. “Cleaning Tips Before Digitizing Slides And Photos,” Aperture. <https://kodakdigitizing.com/blogs/news/cleaning-tips-before-digitizing-slides-and-photos>

Key elements of a digitization workflow might include:

- Create **primary file** (also known as a “preservation file,” “archival scan/file,” or “raw file”)
- Name the file according to your **file naming convention** (See [Describe](#) section of this toolkit for more information)
- Conduct **quality control** review
- Create **access copy** (sometimes called a derivative file or user copy), if needed
- Move primary file to stable **storage** (See [Store and Maintain](#) section of this toolkit for more information)

Questions to ask as you create a digitization workflow:

- Who is responsible for what aspect of digitization?
- What equipment is used?
- For A/V materials: What cabling, connections, and signal path will be used?
- What software is used?
- Where are files stored?
- What are common challenges and how do you solve them?
- What is the quality control procedure?
- Who communicates with the vendor?
- What kind of files do you plan to make? What are the specs?
- If making access files, do you plan to edit, clean up, create OCR, etc.?

Digitization Workflow Examples

[Scanning and Cataloging Workflow](#), Chippewa Valley Museum

[Epson Perfection V600 Photo Color Scanner Workflow](#), South Central Library System

[VHS Digitization Workflow](#), Sustainable Heritage Network

Photographing Museum Objects

Our recommendations in this area are still under development, but here are a few resources to get you started:

- [Photography Standards and Instructions](#), Maine Memory Network, Maine Historical Society
- [Basic Object Photography](#), William J. Hill Texas Artisans and Artists Archive

Silver Level: Resources and Tools

“[Tutorial: Scanning Historic Photos.](#)” . Recollection Wisconsin, 2012.

“[Scanning Photos.](#)” Recollection Wisconsin, 2016.

“[Digital Reformatting and File Management.](#)” . Public Library Partnerships Project, DPLA, 2015.

[Digitizing Entire Collections, Chapter 4.](#) Archives of American Art, Smithsonian Institution.

Woody, Rachel Christine. “[Create a Museum Digital Project Workflow That Works.](#)” Lucidea, 2021.

Hutton, Emily. “[How to Convert Film Negatives to Digital Pictures.](#)” Image Restoration Center, 2022.

DIGITIZE: GOLD LEVEL

Key Activities

- Develop a list of what to check during a quality control review.
 - Determine who is responsible for quality control.
 - Use a log to track digitization work and quality control reviews.
-

Quality Control

As you digitize, be sure to review the digital files on a regular basis. The goal of regular **quality control** is to ensure that you are creating faithful digital copies of the original materials and that the digital files are being created according to the standards you determined at the start of your project. This step is especially important when working with volunteers or vendors.

Basic quality control for digitized images and documents includes confirming that:

- The file can be opened
- The file name is correct
- The image is not rotated or backwards
- The image is not skewed, off-center, or unevenly cropped
- There are no unwanted materials (dust, hair) or digital artifacts in the image

Basic quality control for digitized audio and video includes the above, plus:

- The file size is as expected
- Checking 5-second segments at the beginning, middle, and end of the recording
- The sound syncs up with the video.

The first round of quality control should be done by the digitizer after they complete a batch. The second round of quality control should be performed at least weekly by a separate individual. Consider adding columns to your collection log (described in the [Store and Maintain](#) section of this toolkit) to track who is doing the digitization, when scanning was completed, and when quality control was performed (See [Appendix B – Collection-Level Log](#)).

For more on quality control, see the Sustainable Heritage Network's "[Guide to Quality Control and Quality Checklists](#)." This helpful guide gives a fuller picture of quality control needs and procedures, and we suggest you customize the relevant sections for your project.

Scanner Calibration and Color Targets

Calibration refers to aligning a scanner's color profile with its attached computer's color profile using a color target. A **color target** is a small card with a range of colors printed on it that the scanner can scan during the calibration process. Calibrating your scanner using a color target helps you achieve accurate color results in your image scans; this process sets the colors on the target as precise references for colors in your scanned image.



Color target

Gold Level: Resources and Tools

Norton-Wisla, Lotus. "[Guide to Quality Control and Quality Checklists](#)." Sustainable Heritage Network, 2020.

Wagner, Patrick. "[Scanner Calibration with IT-8 Targets](#)." Scandig.

"[Digitization Quality Control Workflow](#)." UCLA Library Special Collections.

CHAPTER 4

Focus Area 4: Describe

Descriptive information about your digital content, called **metadata**, helps users find your items, understand their contents and origins, reflect on your community's history and values, and make sense of how they may use the materials.

DESCRIBE: BRONZE LEVEL

Key Activities

- Adopt a file naming convention and document it.
 - Determine the metadata standard you will use and how the metadata fields apply to your collections.
-

File Naming

As you digitize your collection items and save your digital files, you'll need to assign a file name to each one. Using a well-defined and consistent system for organizing and naming digital files will make your life easier, now and in the future. If feasible, develop your file naming system before you begin digitizing.

A few file naming tips to keep in mind:

- **Your file name is not a database record.** Please don't pack a bunch of descriptive information into the name.
- **Your collection may grow!** Your file naming system should accommodate future growth. Use up to five leading zeros with the numbers 0-9 to facilitate proper sorting, for example: smith00001.tif, smith00002.tif, smith00003.tif.
- **Format dates consistently.** When using dates in a file name, always start with YYYY, then MM, then DD so your files sort appropriately. If it's easier to read, add hyphens between the year, month and day, for example: 2012-12-01.tif.
- **Avoid funky characters.** Do not make it "machine-unreadable" by using quotation marks, colons, or slashes. Stick to numbers, letters, hyphens, and underscores only.
- **No spaces, please.** Use underscores (_) and dashes (-) to represent spaces. Spaces are often reserved for operating system functions and might be misread.
- **Keep it short and sweet.** Avoid including too many or overly complex elements within the file name.

File Name Examples

Generic archives file naming convention:
 [collection]_[box #]_[folder #]_[item #].ext
 Example: **goggins_box1_folder3_item006.tif**

For a photograph with accession # 2011.32.1: **201132001.tif** –OR– **2011_32_001.tif**

For a series of images by photographer John Smith: **smith001.tif**, **smith002.tif**, **smith003.tif**

Not so good: *Glassplate16039 Auto repair in basement 025.tif*

Once you've created a naming scheme, consider batch renaming existing digital files using a free, web-based tool such as [AdvancedRenamer](#). This will save you a ton of time and reduce potential human-created file-naming errors.

Folder Structure

As you create and name files, organize them into folders in a structure that makes sense for how they will be used. Then document that structure so that others will understand where files are located and where to put new content.

For example, research files for internal use only might be moved to a network drive or a reference desk computer and the files might be organized into broad topic categories:

- RESEARCH FILES
 - LOCAL BUSINESSES
 - LOCAL HOMES
 - COMMUNITY EVENTS

If you'll be loading access files to a **Collection Management System**, move them to the computer where you'll be doing that work. The folder structure might be as simple as:

- FILES FOR ONLINE ACCESS
 - TO UPLOAD
 - UPLOAD COMPLETED

When creating a folder structure, make sure not to have too many “nested” folders. If you are opening a series of more than four folders to get to a specific file, your folder structure may be too complicated¹.

Identify and Adopt a Metadata Standard

A **metadata standard** is a set of rules that helps to ensure that descriptive information is applied consistently. Consistent, standardized metadata is important because it makes your digital content searchable, findable, sortable, and shareable, both locally and as part of the vast ocean of digital content available online across the world.

Before you get started describing your digital content, determine the **metadata standard** you will use. [Dublin Core](#) (or DCMI – Dublin Core Metadata Initiative) is a widely adopted metadata standard used by cultural heritage

¹. Personal Digital Archiving: Organization, University of Montana. <https://libguides.lib.umt.edu/c.php?g=712064&p=5066898>

organizations of all types and sizes². [PBCore](#) is another metadata standard commonly used in A/V collections. Many collection management systems (CMS) are structured around a particular metadata standard, so if you're using a CMS, that decision might already be made for you!

Bronze Level: Resources and Tools

[Best Practices for Naming Electronic Records](#). Wisconsin Historical Society.

[Best Practices for Organization of Electronic Records](#). Wisconsin Historical Society.

[File Naming/Organization](#). South Central Library System.

[Working with Dublin Core](#). Omeka.

DESCRIBE: SILVER LEVEL

Key Activities

- Create metadata for items.

Item-Level Description

Different types of metadata provide different types of information. **Descriptive metadata** for digital cultural heritage items aims to answer some very basic but important questions for you and your users:

- What am I looking at?
- Who created it?
- When was it created?
- Where was it created?
- Who owns it?
- How can I use it?

But where does all of this descriptive information actually go? You can input metadata into a simple spreadsheet, in a content management system or database, or, in some cases, embed it into the digital file³. Metadata files should be digitally stored with the collection to which they refer.

General metadata input guidelines:

- **Avoid the use of abbreviations.** Spell out the full names of communities, people and places.
- **Capitalize all proper names.** Capitalize only the first word in titles and subject terms.
- **Avoid using special characters** such as ampersands (&) or ellipses (. . .) and HTML tags. For example, do not use < br > or < br / > within metadata fields to force a line break.
- **Fields for which there is no available information should be left blank.** Avoid using “unknown,” “anonymous,” etc.

2. DCMI Metadata Terms. <https://www.dublincore.org/specifications/dublin-core/dcmi-terms/>

3. Photo Metadata Project, Stock Artists Alliance. <http://www.photometadata.org>

- **Subject** refers to terms or phrases assigned to an item to facilitate searching and browsing a collection. Consistent use of subject headings helps link related content in your collection and across disparate collections. The subject is intended to describe “aboutness,” not the physical item or its location.
- **Description** is a free text field for all extra, relevant information that does not have a “home” in other fields. We recommend that you include the names of people here whenever possible. Provide enough information to add meaning for non-local users. You may include short **transcriptions** here, like a handwritten note on the back of a photo, but don’t include full-text or **OCR** transcriptions.

Metadata Record Examples

[Sample Metadata: Postcard](#), Recollection Wisconsin

[Sample Metadata: Oral History Interview](#), Recollection Wisconsin

[Sample Metadata: Yearbook](#), Recollection Wisconsin

[Sample metadata: Moving Image](#) (starting on page 10), California Revealed

Silver Level: Resources and Tools

[Metadata Creation Template](#). Recollection Wisconsin.

“[Metadata Essentials](#).” Recollection Wisconsin, 2020.

“[Tutorial: Creating titles for historic photographs](#)” Tutorial: Creating titles for historic photographs.” . Recollection Wisconsin, 2013.

[Metadata Guidelines](#). California Revealed, 2023.

DESCRIBE: GOLD LEVEL

Key Activities

- Identify and/or create controlled vocabulary lists to use when creating metadata.
- Create a data dictionary to document the standards you will use for metadata.

Controlled Vocabularies

A **controlled vocabulary** is a predetermined list of terms and phrases used to describe resources. Controlled vocabularies help establish consistency and enable discovery by grouping and connecting related content. In other words, using the same subject terms, creator names, place names, etc. as everyone else describing digital materials means that search terms will turn up the same types of items across multiple collections.

Controlled Vocabulary Examples

Subject	Library of Congress Subject Headings (LCSH)
	Library of Congress Thesaurus for Graphic Materials (LCTGM)
	Getty Art and Architecture Thesaurus (AAT)
	Nomenclature for Museum Cataloging
Type	DCMI Type Vocabulary Type Vocabulary
	PBCore instantiationPhysical for Audio , Video , and Film
Creator	Library of Congress Name Authority File (LCNAF)
Place	Getty Thesaurus of Geographic Names
Language	ISO 639.2 (Codes for the Representation of Names of Languages)
Rights	Rights Statements URIs

Data Dictionary

A **data dictionary** or metadata style guide is a document describing, connecting, contextualizing, and interpreting your metadata fields. It's important to document what kinds of information should be captured in each metadata field, and how, so that others can refer to it as they create new metadata records in a standardized way.

For instance, your community may have a particular content creator whose name is known in more than one way — perhaps a nickname. Your data dictionary could specify that the “Creator” field should include both the given name and nickname of creators, i.e. Paul “The Lumberjack” Bunyan.

Data Dictionary Examples

[Listening to War data dictionary](#), Recollection Wisconsin

[Metadata Style Guide for Digital Maryland Collections](#)

[Guidelines for Uploading Exhibit Submissions to Mukurtu](#), Great Lakes Culture Keepers

[Clements Texas Papers](#), Briscoe Center for American History

Metadata Considerations

Controlled vocabularies, data dictionaries, subject headings, and other standardized metadata have been created by people: human beings with human perspectives and biases. Additionally, terminology, understanding, and relationships change and evolve over time. This means that subject terms determined by the Library of Congress or another authority may not be accurate or acceptable today, in your geographic region, or for your experiences.

Creating metadata gives the writer a lot of power to decide how materials will be discovered and understood by users in the future. While we can't know how terms might change going forward, we can consciously create metadata that uses community members' preferred terminology. For instance, although there are many place names in Wisconsin that use the outdated word “Winnebago,” the citizens of Ho-Chunk Nation prefer “Ho-Chunk” to describe themselves⁴.

We've included several resources in the Resources and Tools list below to get you started on what's called inclusive metadata.

4. Ho-Chunk Nation, Hochungra - The People With The Big Voice, Wisconsin First Nations. <https://wisconsinfirstnations.org/ho-chunk-nation/>

Gold Level: Resources and Tools

[Introduction to Conscious Editing Series](#) Sunshine State Digital Network, 2020.

[A choice to empower.](#) University of North Carolina, 2021.

[It's All In The Details.](#) Iowa State University, 2021.

[Anti-Racist Description Resources.](#) Archives For Black Lives in Philadelphia, 2019.

[Equitable Metadata Practices Related to Race, Gender and Culture.](#) DigitalINC, 2021.

CHAPTER 5

Focus Area 5: Share

This section of the Toolkit is all about **access**. Who will access the digital content you're creating or acquiring? Where and how will they access it, and for what purpose? The appropriate level of access may vary depending on the content. You might share some items openly online with no restrictions. Other materials might be made available to certain researchers on-site only, due to copyright considerations, cultural protocols, or other factors.

SHARE: BRONZE LEVEL

Key Activities

- Review options for providing access to digital content.
 - Choose access options that meet your needs and goals.
-

Choosing a Collection Management System

There is an ever-growing number of options for providing online public access to digital collections. Sharing items on Facebook or Instagram, adding them to a blog or webpage, or loading them to the Internet Archive are all ways to get your digital materials in front of more people. But adopting a Collection Management System (CMS) — a software program to organize, manage, and share your digital files and metadata — will give you the most control, flexibility, and reliability into the future.

Some questions to consider when choosing a CMS¹:

- How long has the system been around? Is it used by other organizations similar to yours?
- Is there a trial or demo version available for you to try out?
- What infrastructure is needed to install and run the system? For instance, will you need a local server or a cloud hosting provider?
- Will the system work on your computer stations? Some programs don't run well on computers with little working memory.
- Will the system support your chosen metadata standard? Can the metadata fields be customized?
- Can you import existing files and metadata into the system?
- Can you perform batch edits across multiple metadata records?

¹. Adapted from [Choosing Content Management System Technologies](https://bits.ashleyblewer.com/blog/2017/08/09/collection-management-system-collection/). Digital Repository of Ireland, 2014 and Ashley Blewer, "The Collection Management System Collection," 2017. <https://bits.ashleyblewer.com/blog/2017/08/09/collection-management-system-collection/>

- Can you export files and metadata if you choose to migrate to a different system?
- What kind of support is available? Can you ask or pay an organization to fix things for you? Is there a large community using it, and support potentially found there, such as through a user forum or email list?
- What are the costs for the system, both up front and ongoing?

See [Appendix E: Choosing An Online Platform for Audiovisual Materials](#) for more A/V-specific information.

Bronze Level: Resources and Tools

[The Collection Management System Collection](#). *Crowd-sourced list of digital repository options; created in 2017 and regularly updated.*

["Deciding on Digital Tools for Collection Management."](#) Te Papa National Services (New Zealand), 2003.

[Choosing Content Management System Technologies](#). Digital Repository of Ireland, 2014.

Spiro, Lisa. [Archival Management Software: A Report for the Council on Library and Information Resources](#), 2009.

SHARE: SILVER LEVEL

Key Activities

- Add digital collection items and related metadata to your CMS or other identified access option(s).
 - Identify partnership opportunities to make your items more widely discoverable.
-

Restricting Use

A common question we hear is how to share digital items online in such a way that they can't be downloaded or shared without permission. Ultimately, it is impossible to fully prevent someone from copying or saving your images if they wish to do so.

However, there are several strategies an organization can undertake to mitigate this concern:

- Use a small-sized, lower-quality image (access copy) for public sharing
- Add watermarks to digital images
- Add a code or plugin to your website to disable right-click saving
- Post a Creative Commons license that requires users to credit the source of the material and does not allow for commercial use or making changes²

Silver Level: Resources and Tools

Gregory, Lisa and Stephanie Williams. ["Some Details behind Providing Metadata for the Digital Public Library of America."](#) D-Lib Magazine, 2014.

Pfotenhauer, Emily. ["Recollection Wisconsin + DPLA."](#) . Recollection Wisconsin, 2021.

["Promoting Use of Your Digital Content."](#) . Digital Public Library of America, 2015.

2. Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0), Creative Commons. <https://creativecommons.org/licenses/by-nc-nd/4.0/>

SHARE: GOLD LEVEL

Key Activities

- Provide alternative text descriptions for all visual images made available online.
 - Provide searchable full text for all text materials made available online.
 - Provide transcripts or captions for all audio and video recordings shared online.
-

Web Content Accessibility

Making your digital content **accessible** to all potential users means putting in place tools and features to make web content available to people with disabilities. For instance, a user who is Deaf or hard of hearing may make use of text transcripts of audio or video recordings. A user who is blind or visually impaired may rely on a screen reader to access websites.

Web accessibility is a complex issue. A few core features you can implement to improve the accessibility of digitized archival materials and historical resources are described below.

Photographs, postcards, and other visual images:

- Provide concise and meaningful text descriptions of all visual items. You can put these descriptions in a “Description” field in your metadata. Or, for images included on a web page, put the description in the alt attribute (alternative text) within the HTML element. For example, a picture of a house with two people in front of it might have the alt text “log cabin in rural Wisconsin with two people standing in front of it, circa 1880s.”
- If there is text in an image that is important for understanding the meaning of the image, like writing on a storefront or a photographer’s handwritten title, transcribe that information and include it in the description.

Book pages, articles, letters, diaries, and other texts:

- Use **OCR** software to generate a searchable transcript of any printed text. OCR may be a feature of your CMS or your scanning software, or you can use a program such as Adobe Acrobat.
- Create a searchable transcript of any handwritten text in a text file or pdf.
- When creating new digital documents, such as a handout or meeting agenda, use properly nested headings to create an outline of the content. Add bullets or numbers to any items in a list, and if using tables, make sure row and column headers are clearly labeled.

Oral history interviews, performances, or other recorded sound, video, or film:

- Provide transcripts of audio recordings. Transcriptions may be auto-generated using speech-to-text recognition software, created by volunteers, crowdsourced, or outsourced to a vendor.
- Provide captions for video content. Include text-based descriptions of non-audio content as well as captions for spoken words.

Gold Level: Resources and Tools

[Digital Library Accessibility and Usability Guidelines \(DLAUG\) to Support Blind and Visually Impaired Users](#). University of Wisconsin-Milwaukee.

[Web Accessibility Evaluation Tool](#). WebAIM at Utah State University.

[Verbal Description Training](#). Art Beyond Sight Museum Education Institute.

[Guidelines for Audio Describers](#). The Audio Description Project, 2003.

[Accessibility Best Practices](#). City University of New York.

[Edit or Remove Captions in YouTube](#). Google, 2022. *Add punctuation and capital letters to the automatic captions to denote sentences and pauses.*

[Transcription Tips](#). National Archives, 2019.

CHAPTER 6

Focus Area 6: Store and Maintain

The activities in this section of the Toolkit will help put your organization in a position to manage your digital content over time, across generations of technology, so that the files you create or collect today can be opened and used 5, 10, or 50 years from now.

STORE AND MAINTAIN: BRONZE LEVEL

Key Activities

- Establish an inventory to document existing and incoming born-digital collections.
 - Establish an inventory to document existing and incoming reformatted analog collections.
 - Develop a plan for storage locations of unmodified primary files and related metadata, both on-site and off-site.
 - Develop a plan for checking and refreshing storage media on a regular schedule.
-

Documenting Digital Collections

Use a collection-level log to document your existing digital collections and any new collections you create or acquire. Creating a list and updating it regularly will give you a big-picture view of the digital collections your organization is responsible for storing and maintaining. This log is not the same as the item-level inventory you may have created in the [Plan and Prioritize section](#); instead, it's a way to keep track of what you have digitized or acquired in digital form and where you're storing those files. We've included a template for a collection level log in [Appendix B](#).

This information will be useful for creating item-level metadata, estimating the amount of storage space needed for digital collections, budgeting, and future planning. Collection-level descriptions might also be shared with users in finding aids, as part of a catalog record, or on a website providing context for the collection.

Keep in mind that this log is a collection-level snapshot; don't use it to describe individual items. Oftentimes, digital content doesn't align into neatly defined collections. If that's the case, just think in broad categories. You might determine groups based on format or topic (a map collection, a yearbooks collection, an oral history collection) or the source of the content (materials from a donor, a student intern project, photos scanned for researchers).

Types of digital collections to document in your log might include:

- Scanning projects
- Oral history interview projects

- Born-digital collections donated by a community member
- Born-digital materials created by your organization, such as event photos or newsletters
- Materials digitized for exhibits, outreach, or educational activities
- Materials digitized to fill reference requests

Basic information to record in a collection-level log includes:

- A name for the digital collection
- Total number of files in the collection
- Total size of all files in the collection
- File format(s)
- Storage location(s)
- Date of digitization

You may want to include information in your log indicating the current status of the collection, such as Digitization Done, Metadata Done, and/or Ready For Upload. This can be a helpful way of tracking which steps are completed and what needs to be done next. It is especially useful if different people are responsible for different parts of the project.

Digital Storage Plans

What Makes Storage Preservation-Level?

Digital preservation-level storage requires intentional planning, documentation, and long-term care. The primary qualities that distinguish preservation-level storage are:

Must-haves:

- **Redundancy.**
- Content migration plan.
- Designated storage managers.

Nice-to-haves:

- Integrity checks.
- Security / access control.
- Organization system to manage storage media and stored objects.
- Distinct geographic locations for duplicate preservation files.

Redundancy means that you have more than one complete copy of all of your digital files. Three complete copies of your data is ideal, but two copies is sufficient as you begin your storage planning. One of the biggest issues with digital storage is that it is possible to lose all your data in an action as simple as dropping a hard drive. Having multiple copies protects you from total data loss: if one copy is lost or corrupted, another complete copy exists that can be used to make additional copies. Redundancy should be factored into all digital storage planning – for instance, if you have 2 TB of files to preserve, plan for 4 TB – or, ideally, 6 TB – of storage space.

A documented **content migration** plan is key to the longevity of digital collections. Storage media has a finite lifespan and ages over time, while technology changes and improves. Content can't stay in one location forever: as storage media ages, content needs to be transferred to new storage media. Plan to migrate digital collections to new storage devices every 3-5 years – or immediately if there is a problem. Anticipate storage capacity needs (including backup). Don't wait until you run out! Research storage media types and brands before purchasing. Research and test workflows for moving content in and out of storage.

Designated storage managers are individuals who are the stewards for your digital storage. The storage manager is in charge of tasks like fixity checks, as well as knowing how storage is set up, accessed, and migrated over time. It is critical for a designated person to be in charge of digital storage: otherwise, your storage is at risk for loss due to neglect and human error.

Integrity checks are methods of confirming that your data stays the same over time. Factors like poor physical storage of hard drives or not migrating data on a schedule can lead to data corruption and loss; integrity checks are designed to identify those issues so you can address them. Integrity checks are completed by creating **checksums** for files, and then verifying those checksums at regular intervals (for example, once a year). More information about checksums can be found in the Gold Level of the Store and Maintain section of this Toolkit. While checksums are easy to create, they do require some technical expertise. As such, consider them a priority, but not a requirement for your storage implementation.

Security/Access control: Keep archival content separate from work space. Limit access / permissions to archival content to select individuals.

Organization system within storage: Agree on where different types of files should be placed, and label files and folders consistently (as outlined in the [Describe section](#) of this Toolkit).

Bronze Level: Resources and Tools

["Digital Preservation Webinar Series: Identify,"](#) Consortium of Academic and Research Libraries in Illinois (CARLI), 2014.

Nelson, Tom. ["Do HDDs Or SSDs Need 'exercise'? The Rocket Yard Investigates."](#) Rocket Yard, 2018.

["Backblaze Hard Drive Data and Stats."](#) Backblaze, 2023.

STORE AND MAINTAIN: SILVER LEVEL

Key Activities

- Move copies of files to their on-site and off-site storage locations.
 - Implement a plan for checking and refreshing storage media on a regular schedule.
 - Develop a plan for checking file integrity (fixity).
-

Digital Storage is Not a Backup

The type of storage we're talking about here is NOT the same as a backup system. A backup is a snapshot of your computer at a certain moment in time¹. Backups enable quick restoration after accidental data loss, system

1. "Digital Preservation," University of California San Diego Library. <https://library.ucsd.edu/lpw-staging/research-and-collections/data-curation/digital-preservation/index.html>

crashes or other errors. Backups are typically saved for 30-90 days. **Digital archival storage** provides an environment where the content you aim to retain over many years — your primary files and related metadata — can be kept safe and unchanged. Digital storage requires continued management to ensure that hardware remains operational and that digital files do not succumb to bit rot, misplacement, or erasure.

The 3-2-1 Rule

The 3-2-1 Rule is mentioned frequently in relation to digital storage². It means:

- 3 – Make three copies of your digital files. That way you always have a copy you can recover if one storage location fails. This is the **LOCKSS principle: Lots of Copies Keeps Stuff Safe**.
- 2 – Use two different storage media. Don't rely on one form of technology. Make at least one of your copies in another storage format.
- 1 – Store one copy in an offsite location. In case of **disaster**, like a flood or tornado, keep one copy of your files in a different geographic location, such as with a partner in another county or state, or with a cloud storage provider.

3-2-1 Backup Rule



Selecting Storage Solutions

Regardless of which storage solutions you choose, consider them “**cold storage**” for your unmodified primary files and their related metadata. To avoid accidentally deleting, moving, or modifying those primary files (aka archival files or preservation files), keep them stored separately from any access copies. Refer to the [Digitize section of this Toolkit](#) for more on the difference between primary files and access copies.

Network Attached Storage (local server) is a strong storage option if that is available to you, either on-site in your own building, or with a local partner such as your city or county government. To avoid the chance of files getting accidentally moved or deleted, limit the number of people who have access to your storage on the network drive – don't use a shared or public drive (often labeled as C:, D:, or S:).

Other storage solutions include the many flavors of **cloud storage** (see below) and external hard drives. The Digital Preservation Outreach and Education Network (DPOE-N) recommends **hard disk drives** that support RAID,

2. Adapted from Steve Whitmer, “Digital Archiving,” University of Michigan Library. <https://guides.lib.umich.edu/c.php?g=992751&p=7183005>

which stands for Redundant Array of Independent Disks. In a RAID system, if one hard drive fails, the second one will keep the data intact³. Be aware that external hard drives have short lifespans! Every three to five years, you'll need to copy your files to a new external hard drive and retire the old one. (This is what "refreshing" your storage media means.)

Removable optical media, specifically gold "archival" DVDs or M-discs, may be an appropriate choice for small organizations with limited budgets, as long as these are not the only type of storage you use. Do not use USB flash drives, CDs, or rewritable DVDs for long-term storage. Flash drives (aka thumb drives or memory sticks) can easily be overwritten or damaged, and their small size makes them easy to misplace. Optical drives to read CDs and DVDs are no longer standard in computers; neither are earlier generations of USB ports⁴. If you have files on these types of media that you want to keep, copy those files to a more stable storage location as soon as you can.

Caring for Storage Media

External and internal hard drives require care similar to other audiovisual carriers. The basic components of storage media care include:

- Store in a cool, dry environment.
- Exercise / activate drives at least every 4-6 months.
- Plan to refresh storage every 3-5 years.
- Diversify storage media.

Store in cool, dry, environment: This gold standard applies not only to film and magnetic audiovisual media, but all digital storage media as well. When hard drives are stored in a cool, dry environment, they are able to operate at their optimal ability with minimal media degradation. This provides a stable environment for your data. Extremely high or extremely low temperatures (below 40F or above 120F), fluctuating temperatures, and high humidity can negatively impact these devices.

Exercise / activate drives: When drives are powered on regularly, at a minimum of every 4-6 months, it helps to reduce the risk of magnetic field corruption and ensure that the drive's hardware (platters and spindles) are operating properly. (Note: When you're exercising a drive, that's also a great time to perform fixity checks on files.)

Plan to refresh storage every 3-5 years: Even with proper care, hard drives have documented increased failure rates as they age. Purchasing hard drives every 3-5 years ensures that your storage media are running properly and compatible with new technology. When purchasing new drives, consider the digital environment in which they will operate. Is your workstation a Mac or a PC? What operating system are you running? What kinds of connectors does your workstation support? Take note of reviews related to issues such as consistent drive failures and difficulty extracting content due to proprietary software.

Diversify storage media: When upgrading your storage system 3-5 years from now, it's worth considering buying different brands of hard drives. This is done in the interest of avoiding data loss due to common media issues. If you store identical copies of your data on the same types of hard drives, there is a slim possibility that an issue common to that type of hard drive will lead to data loss. If you store identical copies of your data on different media (G-Tech and Seagate brands, for example), an issue with one model may not affect the other.

3. "Emergency Hardware Support," Digital Preservation Outreach and Education Network. <https://www.dpoe.network/emergency-hardware-support/>

4. Steve Whitmer, "Digital Archiving," University of Michigan Library. <https://guides.lib.umich.edu/c.php?g=992751&p=7183005>

How much storage space do I need?

When making decisions about where to store your digital content, it helps to know how much content you need to store. As you're doing that math, keep in mind the 3-2-1 Rule and be sure to plan for enough storage space for all three of your copies.

A quick formula for getting a rough estimate of how much storage space you need for scanned photographs or other images is:

$$\text{Total number of files} \times \text{Average file size, in MB} \times 3 \text{ copies} = \text{_____ MB}$$

Then add on another 10% to that number, to account for access copies, metadata, and any other supplementary files you'll need to store. Estimating storage for audio and video files is a little trickier. Not only are they huge, but the file size can vary significantly depending on the total length of the recording and other factors.

Off-Site Storage

Off-site storage refers to a data storage facility that is physically located away from your organization. Using off-site storage can mean placing a hard drive with a community partner across town; it can mean a copy is stored on the county server a few hours away; it can mean cloud storage in a secure location across the country. Your needs and available resources will dictate which option is best for your organization, but the idea is that, in the unlikely event that a flood, tornado, or other disaster hits one storage location, you'll know that you have another copy stored safely far away.

Cloud storage is a widely-available option for off-site storage. Storing data "in the cloud" really just means putting it on someone else's servers. You upload your digital objects to a third-party storage provider, and they maintain their own data storage facilities and conduct their own backups of the data. Cloud storage options such as Google Drive, iCloud, OneDrive, Dropbox, Backblaze and Carbonite generally have limited storage space available in a free tier, with the option to purchase additional space.

Silver Level: Resources and Tools

Norton-Wisla, Lotus. "[Getting Started with Digital Preservation in a Small Institution Webinar](#)." Sustainable Heritage Network, 2021.

[How long will digital storage media last?](#) Library of Congress, n.d.

[Reliable Storage Media for Electronic Records](#). Illinois Secretary of State, 2023.

Van Malssen, Kara. [Cloud Storage Vendor Profiles](#). AVP, 2017.

STORE AND MAINTAIN: GOLD LEVEL

Key Activities

- Document your storage decisions. Where is it? Who can access it? How?

- Implement plan for checking file integrity (fixity).

- Document procedures used for any file checking tools and perform checks on a regular schedule.

Storage Management

Your work's not done after you've moved your files into storage — they need active management. Use a Storage

Log like the example below to document where files are stored, when they were moved to storage, how often you will check the storage (audit schedule), and how often you will need to update the storage (hardware replacement schedule), if applicable.

Storage information to document for ongoing management:

- **Network Attached Storage/local server:** Find out what the backup protocols are for your server. If it is networked, someone is managing it and likely has a schedule of backups they follow. How often? To what media?
- **Cloud storage:** Who in your organization has access? Where are the username, password, or other needed authentication stored? What is the viability of this service provider over the next 1-3 years?
- **External hard drives or other removable media:** When was it purchased? What brand? Where is the physical drive stored? When will it need to be replaced? (external hard drives should be replaced every 3-5 years).

SAMPLE STORAGE LOG

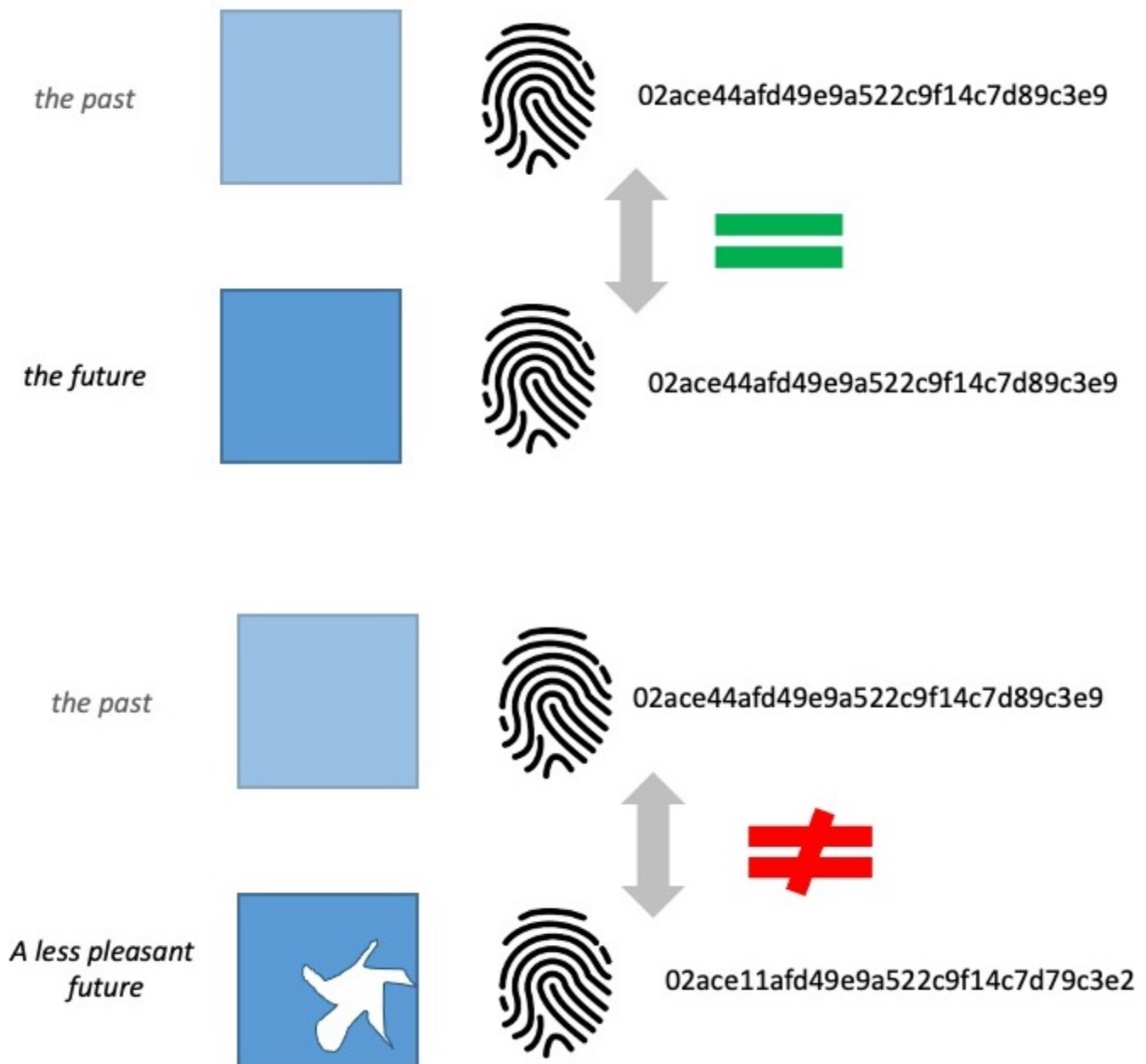
	Storage format and location	Date implemented	Audit schedule	Hardware replacement schedule
Location 1	1 TB Western Digital hard drive, in director's office	January 2020	Every six months (Jan. and July each year)	Every three years. Next replacement date: January 2023
Location 2	Carbonite Safe, installed on curator's desktop computer	January 2020	Every six months (Jan. and July each year)	N/A
Location 3	Dedicated folder on the server managed by public library.	June 2020	Annually	Refer to partnership agreement with library.

Checking File Integrity (Fixity)

The term **fixity** is used to describe the stability of a digital object. The goal of digital archival storage is that your files remain unchanged over time. The challenge is that digital files can degrade or change, and those changes are often invisible to the human eye. Whenever a digital collection is moved, processed, or altered, things can go wrong. Your network connection drops out while you're moving files, a disk gets full and subsequent data copied there is lost, a software bug or crash leads to unexpected results, or human error leads to unintentional deletions or changes.

A simple way to catch some of these kinds of potential errors is to keep an eye on your total file counts and sizes. For example, if you're copying a folder from an external hard drive to a cloud storage location, check the total number of files and total folder size before and after the move to make sure nothing got dropped along the way.

The most reliable way to tell if your digital files have changed is by using software tools to generate and monitor checksums. A **checksum** is a mathematical algorithm run on a file and its resulting value. You can think of this as a digital fingerprint. If a file has remained authentic and stable, with no changes, its fingerprint (checksum) will also stay the same. If a file becomes corrupted, degraded, or is otherwise changed in some way, its fingerprint (checksum) will change.



5

There are software tools available to perform these fixity checks. A checksum-monitoring utility may be built into your collections management system. Or you can use a free or low-cost checksum utility such as Fixity Pro, MD5 Summer, or FastSum.

Checksums do not prevent file corruption or degradation from happening, but they let you know there's a problem

5. Illustration of unchanged and changed checksums. Adapted from POWRR Professional Development Institutes for Digital Preservation slides developed in partnership with the Digital Preservation Coalition. "Bit preservation - getting started." https://powrr-wiki.lib.niu.edu/index.php/File:Bit_preservation_-_getting_started_v05.pptx

so you can address it. If a file is discovered to be altered, you can replace it with an unaltered copy from one of your other storage locations. If lots of files have changed, that's a symptom of a bigger problem – you may need to update your storage media or revisit your file transfer procedures.

When to check file fixity (by comparing file counts, total file size, and/or checksums):

- When files are first created or acquired
- Before files are moved to a new location
- After files are moved to a new location
- On a regular schedule, i.e. every three, six, or twelve months

Gold Level: Resources and Tools

["How-To Guide: Fixity."](#) Outagamie Waupaca Library System, 2018.

[What is Fixity, and When Should I be Checking It?](#) National Digital Stewardship Alliance, 2014.

Boyd, Doug. ["The Checksum and the Preservation of Digital Oral History."](#) . 2012.

CHAPTER 7

Focus Area 7: Evaluate

As you move through the Digital Readiness Levels, take time to review and reflect on your work on a regular basis. Evaluation is both outward-looking — how is our work making a difference for our users and our community? and inward-looking — what have we learned? How can we improve or evolve our work?

As you move towards a new level in any of the focus areas, consider the following questions:

Is it documented?

- Are new directions and decisions represented in existing policies, such as a collection development policy or a rights and reproductions policy? Do policies need to be revised or do new policies need to be created?
- Are new procedures or processes written down, such as steps for using a scanner or standards for how to describe content? Is there enough information provided that someone new to the organization would be able to carry out these processes on their own?
- Are partnerships or arrangements with other parties, such as a digitization vendor or a content contributor, documented in some way, like a contract, Memorandum of Understanding, or letter of commitment?

Is it sustainable?

- Is there a plan for how this work will continue to be supported by staff and/or volunteers from year to year?
- What work needs to be done to maintain relationships with partners or collaborators?
- Is funding committed for any recurring costs, such as a cloud storage service?
- Are best practices and widely-adopted standards being used, so that digital work is “future proof”—that is, it’s compatible with commonly-used platforms and systems?
- Is there an exit strategy for any tools or partnerships? For instance, can content be removed from a platform if necessary?

Is it appropriate, relevant and/or accessible?

- Are new digital initiatives in line with the organization’s mission and values? Do digital initiatives reflect community needs and respect community priorities?
- If information is available publicly, is it violating any privacy, copyright or ethical considerations?
- Can all potential users access the content? What can be done to improve accessibility for people with

disabilities?

Is it working?

- Are we doing what we set out to do? What were our goals and have we achieved them, partially or fully?
- What have we learned and what will we do differently next time?
- What lessons learned would be helpful to other organizations?
- Have we communicated our project decisions and progress to stakeholders and partners, including any funders?

Key Activities

-
- Define user groups and their information needs.
-
- Develop outreach ideas, plans, or strategies.
-
- Revisit original project goals and determine if project goals were reached.
-

EVALUATE: BRONZE LEVEL

Identifying Audiences

Who are the people your digitization projects will reach? “Everyone!” is a good umbrella goal, but taking steps to define specific user groups and their needs will help you connect with them more effectively. Start by brainstorming a list of key audiences, or undertake a community mapping exercise to identify potential user groups¹. Think beyond your go-to groups (genealogists, teachers) to other community members you might not already reach (new arrivals, young families).

For each user group, consider:

- Where are these users? Do they gather regularly, virtually or in person? Where can you find them?
- What is this group’s current relationship with your organization or project?
- How does your work benefit this group? Why should they care?
- What do you want community members to do with your organization or project? What is the “call to action”?
- What challenges or barriers to engagement, such as language or Internet access, do they face and how will you address those?
- What else do you need to learn about this group to facilitate new, more or better engagement?
- Consider that your role in the community may evolve over time. What is your plan for reassessing community needs periodically?

User Personas

To gain an even deeper understanding of your audiences and the best ways to connect with them, you might consider outlining some user personas. User personas are fictional but realistic representations of core audience

¹. Community Mapping, ConnectedLib Toolkit. <https://connectedlib.github.io/modules/community-centered/asset-mapping/>

segments. They're a good way to keep community members' perspectives and needs at the heart of your project development and outreach efforts.

User Persona Examples

[Digital Personas](#), National Archives

[Digital Readiness Community of Practice - Personas](#), Recollection Wisconsin

Building Community Connections

Developing and maintaining relationships with community members gives you insight into how your organization's digital work can best support and serve your community.

Remember the following "rules of engagement" when interacting with community members²:

- Introduce yourself authentically (not just your title, organization, or degree/credentials)
- Always ask permission to engage with an individual or community group
- Reassure folks that you will protect and honor their legacy
- Share copies of any project outcomes and project updates with community members
- Follow up continually – these are never "one and done" interactions

Some community-centered questions to ask as you plan digital projects:

- How do you measure the needs of your community?
- How will digital work serve the needs of your community and organization?
- Does your community have access to computers or other means to use and experience digital content?
- What resources exist that can be shared? (Digitization equipment, knowledge and expertise, workspace, digital or physical storage space)

Bronze Level: Resources and Tools

[User Personas](#). Culture Connect, 2023.

[Personas](#). Usability.gov, 2020.

[Steps For Starting A Community-Institutional Partnership](#). University of North Carolina University Libraries Community Driven Archives, 2021.

[Understanding and Describing the Community](#). Community Tool Box, University of Kansas.

Caswell, M.; Douglas, J.; Chow, J.; Bradshaw, R.; Mallick, S.; Karthikeyan, N., et al. "[Come Correct or Don't Come at All!](#)" [Building More Equitable Relationships Between Archival Studies Scholars and Community Archives](#). UCLA, 2021.

[Assessing the Affective Impact of Community Archives: A Toolkit](#). Community Archives Lab UCLA, 2018.

["Everyone is an Evaluator." Building the Field of Community Engagement](#), Research Institute for Public Libraries, 2015.

2. Adapted from presentation by Morris "Dino" Robinson, Shorefront Legacy Center, August 2021

EVALUATE: SILVER LEVEL

Key Activities

- Gather information about how your collections are being used, such as research inquiries or reproduction requests.
 - Consider using tools such as Google Analytics or Facebook Page Insights to gather data about views and searches.
-

Understanding Use

Do you know how users are searching for, finding, and using your digital content? Gathering data and stories about collection use can help you make the case for allocating funding to digital projects and can inform your decisions about what to digitize next. A solid plan for documenting and evaluating collection use will also strengthen your grant proposals and fundraising efforts.

One way to approach evaluation is simply by paying attention to what your users say and do. What are they searching for in your digital collections? Are they finding what they were looking for? What discoveries have they made? With these kinds of interactions, you might want to follow up to ask for more information, either informally or using some kind of survey tool.

Methods for gathering information about use:

- Evaluation surveys
- Log of patron contacts (for example, keeping track of the number of research inquiries or reproduction requests you receive)
- Attendance numbers at project launch events or other related programming
- Focus groups or individual interviews
- Social listening (for example, observing the comments on photos posted to Facebook or Instagram for recurring themes)
- Web analytics

Evaluation Survey Examples

[Digital Archives Survey 2020](#), Huna Heritage Foundation

[Marshfield Story Project Survey](#), Jaquith Public Library

[Questions to Ask/Interview Protocol, Assessing the Affective Impact of Community Archives: A Toolkit](#), UCLA Community Archives Lab

Web Analytics

Google and other search engines, and Facebook and other social media platforms, all track lots and lots of information referred to as web analytics. Relying only on a single metric, like pageviews, won't give you a full picture of use and engagement, but considering web analytics in combination with user feedback, research requests, and other data can help you understand and demonstrate the impact of your digital work.

Web analytics might help you answer questions such as:

- What do people search for that brings them to your digital collection? (keywords)

- Where were they before they came to your website? (referrals)
- How long do they stay on your website? (bounce rate)
- Which items in your collection get the most attention? (pageviews)

Silver Level: Resources and Tools

[Social Media Analytics: What to Measure and Why](#). [recorded webinar]. OCLC, 2017.

Szajewski, Michael. [Using Google Analytics Data to Expand Discovery and Use of Digital Archival Content](#). Practical Technology for Archives, 2013.

[Listen To This! How To Use Social Listening To Gain New Insight and Catch Promotional Opportunities for Your Library](#). Super Library Marketing: Practical Tips and Ideas for Library Promotion, 2021.

[Google Analytics Usage Reports for CARLI Digital Collections](#). Consortium of Academic and Research Libraries in Illinois, 2022. Includes explanation of various fields in Google Analytics reports.

EVALUATE: GOLD LEVEL

Key Activities

- Document lessons learned and ideas for how to apply what you've learned to future projects.
 - Connect with other practitioners engaged in digital work.
-

Wrapping Up a Digital Project

As you approach the end of a project, think ahead to how you will wrap it up. Tying up loose ends, gathering documentation, and taking time to reflect will help make your next project even more successful!

Steps in wrapping up a digital project:

- Connect with partners. Make sure you're on the same page regarding any ongoing commitments. Consider establishing an MoU or other written agreement if you don't already have one in place.
- Help transition your team members. If you hired short-term staff, offer to help them with references or a resume and cover letter review, if appropriate.
- Wrap up the financial and administrative end. Close out any contracts, confirm all invoices are paid, submit required grant reports, etc.
- Preserve project documentation. Assemble any workflows and training materials, meeting minutes, reports, partnership agreements, donor agreements, and logins and passwords for hosting platforms, cloud storage, software tools, or shared workspaces such as Dropbox or Google Suite
- Evaluate and reflect. Arrange a project "debrief" with your team shortly after your project ends. Invite project staff, volunteers, leaders, or other key stakeholders to join you. Discuss the successes, challenges, and lessons learned, and invite honest feedback about their experiences.

Share What You Learned

You don't have to be a large, well-funded organization to share your project findings and outcomes with others in

your field. Small and rural libraries, archives, historical societies, and museums are always interested in hearing “how we did it” stories from organizations similar to their own.

Opportunities for sharing what you’ve learned with other practitioners:

- Present a session or a poster at a regional or state-level conference
- Write a blog post or newsletter article for your state library association, regional archives forum, or other similar organization
- Post any workflows you created to the [Library Workflow Exchange](#)
- Host a virtual or in-person brown-bag lunch
- Share on email lists or online communities for local historians, genealogists, or archivists

Gold Level: Resources and Tools

Kiesewetter, Kim. “[Should we do \(or keep doing\) this? Assessment and evaluation for strategic decision-making.](#)” WILSWorld Shorts, 2021.

Tillman, Ruth Kitchin and Sandy Rodriguez. “[Collective Equity: A Handbook for Designing and Evaluating Grant-Funded Positions.](#)” Penn State University Libraries, 2020

[Community Personal Archiving Projects Programs.](#) User-contributed spreadsheet, 2023.

[Personal Archiving Organizations.](#) DC Public Library Memory Lab Network, 2022.

PART II

WORKSHEETS

Digital Project Planning Worksheet

This worksheet aligns with the seven focus areas of Recollection Wisconsin's [Digital Readiness Levels](#). For detailed guidance on any section, refer to the Recollection Wisconsin Digital Readiness Toolkit.

Note: You may not have all of the answers at hand at the start of a project, and that's ok! Treat this worksheet as an outline of the key components you should prepare for as your project evolves, and a space to record decisions as your project progresses.

FOCUS AREA 1: PLAN AND PRIORITIZE

Why Digitize?

What are your primary goals for this digital project? Many of these may fit, but select the 2 or 3 MOST IMPORTANT goals or objectives.

Improve internal access and intellectual control (e.g. inventory)

Generate revenue (e.g. sell reproductions)

Improve public access to frequently-used items

Use in programs (e.g. exhibits, presentations)

Improve public access to "hidden" or inaccessible items

Use by teachers and students

Protect fragile or at-risk items

Other:

How will this project support your organization's mission or strategic plan? *If your organization doesn't have a mission or strategic plan, how does the project fit with your current services and offerings?*

Who will this project serve? Is the project significant to the community? Does the digitization project serve the community?

In one or two sentences, how would you describe the significance of this project to a board member, funder, or community members?

DIGITAL PROJECT PRIORITIZATION

	No	Maybe/ Unsure	Yes	Absolutely!
Value: Is there interest or value in these materials for genealogists, educators, researchers, community members, or other identified audiences?	1	2	3	4
Value: Do the materials contribute new voices or perspectives to the historical record (for example, materials document historically underrepresented groups in our community)?	1	2	3	4
Information context: Is there enough information available to add useful context (we know or can find out names of people, locations, dates)?	1	2	3	4
Availability: Are the materials unique and not already available online?	1	2	3	4
Legal/Ethical issues: Are the materials in the public domain (or we can get permission from the copyright holder) and there are no privacy concerns or other barriers to putting them online?	1	2	3	4
Condition: Are the materials in high-risk, deteriorating formats, particularly audiovisual recordings on media like audiocassettes, VHS tapes, CDs, or DVDs?	1	2	3	4
				TOTAL SCORE:

18 – 24 points: High priority for digitization

12 – 17 points: Medium priority

6 – 11 points: Low priority

Scope and Scale

What types of materials will be included in this project? *Check all that apply.*

Photographs, postcards, or other images

Letters, diaries, or other handwritten manuscripts

Maps, blueprints, or other oversized images

Three-dimensional objects

Slides, negatives, microfilm

Analog Media: Film, Video, Audio (film, magnetic media: open reel and cassette, grooved discs)

Books or other printed texts

Digital Media: optical discs, born-digital

Other:

Approximately how many items will be included in this project? __

Describe the scope of this project. List any subjects, locations, date ranges, etc. that will be included in the project. (Example: *Photographs and postcards from 1870-1970 depicting buildings and people in our county.*)

Describe what is NOT in scope for this project. (Example: *Content from outside our county or where the location is unknown.*)

Resources and Roles

What resources are needed to successfully complete this project? *Specific costs may not yet be known, but keeping these categories in mind will help you build them into your project plan.*

Resource	Is this already in place?	If yes, briefly describe. If no, what do we need to do to move forward?	Costs
Skills and Knowledge (training, guidelines, technical standards)	Y N Unsure N/A		
People (staff, volunteers, interns, vendors)	Y N Unsure N/A		
Hardware (scanner, digital camera, computer)	Y N Unsure N/A		
Software (for online access, image editing, text recognition)	Y N Unsure N/A		
Storage (server, cloud storage, external hard drives)	Y N Unsure N/A		
Other:			

Who will contribute to the project? *Consider permanent staff, short-term staff, volunteers, and interns at your organization and at partner organizations. Some or all of these roles may be filled by the same people or may not yet be filled.*

Role (Tasks)	Activity	Who's responsible? (Names, positions, or vendors)
Project Management	Monitor project plan, budget, and timeline Coordinate project team members Communicate with partners, vendors, and funders	
Digitizing	Organize and prepare materials for digitization Scan materials Perform quality control review on digital files Assign file names	
Cataloging	Review copyright status and assign appropriate rights metadata Determine metadata standards Conduct research or provide context to describe items (subject expert) Create metadata	
File management	Install, configure, and troubleshoot any hardware or software Move digital files to long-term storage locations Regularly audit and update storage	
Outreach and evaluation	Promote project to identified audiences Respond to research and permissions requests Collect analytics and user feedback	
Other:		

What are the total estimated expenses for this project based on the table above? *Include recurring costs (software license, storage costs) as well as startup costs.*

What sources of funding will you use to carry out and sustain this project?

FOCUS AREA 2: OBTAIN PERMISSIONS

What is the copyright status of the items in this project? Check all that apply.

If the copyright status is...	Then...
No copyright in the United States - in the public domain	PROCEED. Describe how the public domain status was determined (i.e. publication date).
In copyright - our organization is the creator and copyright holder	PROCEED.
In copyright - copyright holder has granted permission to use	PROCEED. Make a note of when this permission was granted and where it is documented.
In copyright - Rights-holder(s) Unlocatable or Unidentifiable - need to obtain permission to use	PAUSE. Request permission from copyright holder. If the copyright holder is unidentified, unlocatable, or not responding, document your attempts to contact.
Copyright Not Evaluated - have not yet reviewed copyright	PAUSE. Conduct copyright evaluation before digitizing.

Other than copyright, are there reasons any items in the collection should NOT be made available online?

- Items depict minors (i.e. junior high or high school yearbooks published in the last 10 years, home movies)
- Items include personally identifiable information (i.e. Social Security numbers home address, birth date)
- Items depict Native American graves, ceremonies, or other culturally sensitive content
- Items depict any burial sites (other than cemeteries)
- Items depict medical patients, incarcerated individuals, or other protected populations
- Materials depicting emergency response, crime scenes, or disaster relief efforts that may include images of wounded or deceased people
- Other:

Do any materials in the collection warrant closer consideration before sharing publicly online? Consider adopting a harmful content statement or limiting public access to items with any of the following:

- Offensive/outdated racial or ethnic terms or depictions
- Offensive/outdated gender or relationship-related terms, such as those for LGBTQ+ people
- Items that “out” LGBTQ+ people if they were not publicly out during their lives
- Cultural considerations, such as cultures that do not depict deceased individuals

FOCUS AREA 3: DIGITIZE

In-House, Outsource, or a Combination?

For some projects, it makes sense to digitize the materials yourself. In other cases, working with a vendor or partner might be the way to go.

Some factors to consider:

- **Is specialized equipment needed to digitize the materials, such as audiovisual recordings, oversized items, or microfilm?**
- **Factoring in equipment purchases and staff or volunteer labor, will we save time and/or money by NOT doing it ourselves?**
- **Are we willing to lend the items out for digitization off site?**
- **Do we have the resources and knowledge about proper handling to adequately box and ship items to a vendor?**
- **Are we lacking in specialized skills that will be necessary to complete digitization and quality control?**

Mostly yes? Consider working with a vendor or partner to digitize.

Mostly no? This project is probably a good candidate for in-house digitizing.

Standards

What image resolution (ppi) and other standards will you use to create your digital files? *(Example: 800ppi, 24-bit color)*

Which file format(s) will you use for your primary files? *Check all that apply.*

TIFF (images or documents)

MOV (moving images)

JPEG2000 (images or documents)

WAV (sound)

PDF/A (documents)

.DPX and .BWA (motion picture film)

AVI (moving images)

Other:

Quality Control

As you digitize, be sure to review the digital files on a regular basis. This step is especially important when working with volunteers or vendors. Basic quality control includes confirming that files can be opened; files are named correctly; images are not skewed, off-center, rotated, or unevenly cropped; no unwanted materials or digital artifacts in the image.

How OFTEN will you perform a quality control review?

- Daily

- Weekly
- Monthly

How MUCH content will you review?

- 100% (for small projects)
- A minimal amount: _____
- For A/V, a few seconds at the beginning, middle and end of the recording

FOCUS AREA 4: DESCRIBE

Metadata

Which metadata elements will you use to describe the items?

Metadata elements may include (check those you will use):

Title	Date created
Subject	Formats/materials
Type	Dimensions
Rights	Location (community, county, state)
Creator (author, photographer, etc)	Name of collection
Description	Other:

Also see [Appendix C: Audiovisual Inventory and Template](#), for more metadata elements specific to audiovisual materials.

File Naming

Consistent file naming is important for organizing your digital files and managing them in the future. Some file naming tips: use only lowercase letters, numbers, dashes and underscores; don't use special characters such as ^" < > | ? / : @ ' * & . () ; don't use spaces; use leading zeros (001, 002, 003, not 1, 2, 3).

Provide some example file names you will use for this project:

FOCUS AREA 5: SHARE

If you will provide online public access to digital content, what access solutions will you use? Check all that apply.

CONTENTdm	ResCarta
Omeka	Partnership with public library system
PastPerfect	Mukurtu
Internet Archive	Vimeo / YouTube
Our website	No online access, in house only
Other:	

If you choose to share digital files online, which version of the files will you share – full-sized preservation files or smaller access files?

Will you allow downloads of material or prohibit downloads?

How will you promote this project to your target audiences?

Social media	Announcement in organization's newsletter or blog
In-person or virtual events (presentations, exhibits, etc.)	Bookmark, postcard, or other print material
Press release to local media	Other:

After your project is completed or available, users may contact you with a research question, to share more information about an item, or to request permission to use an item. How will users contact your organization with these requests, and who is responsible for responding?

FOCUS AREA 6: STORE AND MAINTAIN

Where will you store your primary digital files? Choose at least two options. *Best practice is to save three copies in different locations, including one off-site.*

Local area network or local server	RAID device
Server at a partner organization	External hard drive
Cloud storage provider	Other:

How much storage space will you need?

Image files: _____ x _____ x 3 = _____ MB
 (# of files) (avg. file size in MB)

How often will you move digital files into the storage locations selected above?

- Daily
- Weekly
- Monthly
- When project is completed

How often will you run integrity checks on the digital file storage locations?

- Monthly
- Biannually
- Annually
- Other timeframe: _____

Who will be able to access the digital files in long-term storage? Note any logins or contact information needed for cloud storage providers or other offsite storage.

FOCUS AREA 7: EVALUATE

Are any reports required when this project is completed, such as to a board or funding agency? *Note any reporting requirements and deadlines.*

What kinds of information will you collect to understand how the digital project is being used?

Google Analytics or other web analytics

Tracking research inquiries or permission requests

Social media engagement metrics (likes, shares)

Other:

Feedback survey to users

In what ways can you involve the community in the project (shared space or resources, learning opportunities, etc.)?

What resources from the Toolkit will help you with your project?

Are there other resources that are not in the Toolkit that would help you with your project?

Audiovisual Digital Readiness Self-Assessment Survey

This Audiovisual Digital Readiness Self-Assessment Survey was created by the Community Archiving Workshop (CAW) for use with the Digital Readiness Toolkit. The Digital Readiness Toolkit and the Audiovisual Digital Readiness Self-Assessment Survey offer a suite of tools and resources that help you with a customized plan to create, preserve, and provide access to your digital collections.

Note: while this self-assessment survey is aimed at organizations with audiovisual collections, it can easily be adapted for use with other formats. Please feel free to use the questions and structure to guide your own self-assessment!

You can download a Word version of this worksheet [here](#) to adapt for your organization.

[See an example](#) of how the [Audio Visual Heritage Center](#) of Nashville, TN completed this self-assessment survey.

This Audiovisual Digital Readiness Self-Assessment Survey is the starting point for an organization assessing its digital readiness, with a focus on audiovisual collections. It uses a series of questions to help your organization:

- Determine your digital readiness goals for your audiovisual collection and how they fit into your overall mission
- Identify your strengths and challenges in digital readiness
- Define and prioritize one to three digital projects
- Navigate the resources in the Digital Readiness Toolkit so that you can create a customized plan to carry out your digital project

Digital project is defined by CAW as any project that involves the creation, storage, and management of digital files. Throughout the Toolkit and this survey, we use the phrase “digital projects” as an umbrella term to encompass digitization as well as digital stewardship, or the ongoing work of maintaining digital collections.

Digital projects focused on audiovisual collections might include activities that:

- Digitize analog time-based media such as film or magnetic media
- Migrate digital files from optical media, such as DVDs or CDs, to more stable storage
- Reformat digital files from their original formats to a preservation-quality format (i.e. proprietary audio files to Broadcast WAVE)
- Transcode or edit files so they can be used for different purposes, such as for editing or streaming (for example, create clips for patron use)
- Create and implement a digital file naming structure

- Assess and prioritize born-digital files to determine what to keep and preserve
- Check the health of existing digital files, such as running checksums
- Identify long-term digital storage needs following the 3-2-1 rule
- Monitor and update digital storage environments
- Add descriptions or create transcriptions to make audio and video recordings more accessible

How to use this self-assessment with the Digital Readiness Toolkit

Step One: Familiarize Yourself with the Digital Readiness Toolkit

The Digital Readiness Toolkit is full of resources and key activities that can help you achieve your digital readiness goals, such as digitizing your collections, providing online access to materials, determining licensing and copyrights, and caring for digital collections long-term. It's not necessary to read the Toolkit in full to get started, but it is recommended to get to know its layout and some of its resources before you take this self-assessment survey.

Step Two: Complete the Audiovisual Digital Readiness Self-Assessment Survey

The three parts of the survey begin with general questions that help you to think about how digitally ready your organization is, and then focus in to help you to plan for, then reflect on specific projects. You may find yourself returning to your survey answers over the years to assess and document your progress as well as develop grant narratives to support long term goals.

- 1. Part One: Narrative Assessment is designed to help you define how digital readiness fits into your overall mission and help you brainstorm a preliminary list of digital projects that further that mission.**
- 2. Part Two: Focus Area Assessment walks you through seven focus areas that the Digital Readiness Toolkit defines as important considerations to becoming digitally ready. Completing this section helps you identify your current strengths and challenges so that you can address them when you plan your digital projects in more detail.**
- 3. Part Three: The Pathway to Digital Readiness Plan is where you synthesize your answers and discoveries from Parts One and Two. Here you will narrow down and identify your priority digital project or projects from your list in Part One and prepare to create a detailed work plan.**

Step Three: Fill Out the Digital Project Planning Worksheet

Once you have defined a priority digital project, use the Digital Project Planning Worksheet to create an outline, workflow, and budget for your digital project. Return to the Digital Readiness Toolkit and identify and consult the resources that relate specifically to your project.

Step Four: Put It all Together

Once you have gone through the entire process above, you will have the following:

- **A Narrative Assessment that describes where your organization is in its digital readiness mission and how you would like to advance.**
- **A Focus Area Assessment that defines your strengths and challenges.**
- **A Pathway to Digital Readiness Plan that lists your goals and priority digital projects that will**

build upon your strengths and address your challenges.

- **A list of resources in the Digital Readiness Toolkit related to your goals.**
- **A completed Digital Project Planning Worksheet, which will help you turn your digital project ideas into concrete plans with a timeline, workflow and budget.**

You'll then be ready to start your digital project!

Tips for taking the Audiovisual Digital Readiness Self-Assessment Survey

Overall this survey was an uplifting experience and raised my spirits! It enabled me to identify my strengths and anxieties regarding copyright and long-term records management and preservation. – James Scott, Archivist, Sacramento Public Library

The Audiovisual Digital Readiness Self-Assessment Survey is not a test – it is a process of self-discovery, reflection, and learning. There are no right or wrong answers. If you are unsure of what a term means, the Toolkit Glossary can help. If you are unsure of what a question means, answer it the best you can and make a note to yourself to return to that question later. It is ok to answer a question with “I don’t know”; challenging questions are flags that let you know where you can improve or where you need more information. Note any questions that you had trouble answering– this indicates an area that you can improve upon as part of your digital readiness mission. If you feel overwhelmed or have more questions than you do answers, jot them down in a separate document, set them aside for the time being, and continue with the survey. As you move through the process and use the suite of digital readiness resources, you will find that concepts that were challenging or unclear at the start of the project begin to make sense.

Some of the questions are similar to those in the [Digital Project Planning Worksheet](#), but try to complete this self-assessment survey with A/V collections in mind. You may write about your organization’s mission statement in the Digital Project Planning Worksheet, but describing it in this self-assessment with an eye towards how that mission statement applies to your A/V collections will help you focus on the most appropriate A/V projects.

Plan to spend about two to four hours completing the entire survey. The more time and detail that you put into the survey questions, the better prepared you will be to plan and carry out digital projects.

“This survey is an opportunity for candor.” – Sean Dickerson, Archivist, The African American Museum and Library at Oakland

The survey is most successful if you reach out to a variety of staff and stakeholders to answer the survey questions collectively. We encourage the use of the survey as an opportunity to gather and organize existing knowledge and documentation that may be in disparate places. Even if you believe you know the answer to a question, approach it with a sense of curiosity; many survey takers find out new information about their collection during the process.

The survey asks you to estimate the number of items and formats in the collection. Do your best to estimate without counting every item. If you find that you are spending more time counting items than you are reflecting on your digital readiness goals, that’s a sign to refocus. Create the best estimate that you can with the information you have– any estimate will create a foundation for planning. You can always go back to the question and revise an estimate later.

It is recommended to revisit and retake the Audiovisual Digital Readiness Self-Assessment Survey every one to three years to track your progress and re-evaluate your digital readiness goals.

AUDIOVISUAL DIGITAL READINESS SELF-ASSESSMENT SURVEY

Part One: Narrative Assessment

I. Your Organization

This section addresses the organization or group which holds the collections. Use this section to define or reflect upon your mission and how digital readiness fits into that mission. Define “organization” in a way that works for you. If sections of your organization have different missions, feel free to include multiple mission statements.

1. **Does your organization have a mission statement? If yes, please add below.**
2. **If your organization does not have a mission statement, please include a one to two sentence description of your organization’s primary objectives.**
3. **Does your organization’s mission include analog and digital audiovisual materials specifically?**
4. **If no, please describe your organization’s primary objectives for digital collections.**
5. **If no, please describe your organization’s primary objectives for analog collections.**
6. **Why is your organization interested in enhancing your digital readiness? How will becoming more digitally ready serve the mission of your organization?**
7. **What digital readiness concepts would your organization’s staff and volunteers like to be more informed about? (Do your best to rank in order of priority, 1- 11.)**

_____ How to digitize analog audiovisual materials

_____ What analog audiovisual materials to digitize first

_____ How to fund digital projects

_____ How to store digital files long term

_____ How to organize existing or new digital files

_____ What to do with incoming digital collections

_____ How to share digital files internally or externally

_____ How to track and catalog digital files

_____ Copyright issues around sharing digital collections

_____ Privacy issues around sharing digital collections

_____ Other (please name and describe):

II. Audiovisual Collections

This section helps you to think about what types of analog and digital audiovisual materials you have in your collection, and what content they contain. Please note: If you are not sure of what formats or content you have, the Toolkit provides resources for creating an inventory in [Appendix C](#). If you do not have detailed information about

your collection for now, do the best that you can with the information that you have, and consider creating an inventory of the audiovisual items as preparation for digital readiness.

1. **Describe the content of your analog and digital audiovisual collection. Write a list of series, sub-collections, or other groupings you use to identify collections if you have that information.**
2. **Do you have any unidentified content in your collection? If so, describe.**
3. **Approximately how many of each audiovisual media format below does your organization have? Do your best to estimate. (The Toolkit provides resources for [identifying audiovisual formats](#).)**

Film

- 35mm _____
- 16mm _____
- 8mm _____
- Super-8mm _____
- Other: _____

Video

- Open Reel Video Tape (2", 1", ½") _____
- Video Cassette (U-matic, Betacam, Betamax, VHS, Video 8, etc) _____
- Digital Videotape (D1, DVCAM, MiniDV, Digibeta, etc) _____
- Optical Media (DVD, DVD-R, Blu-Ray, Video Disc) _____
- Other: _____

Audio

- Audio Wire Recording _____
- Grooved Audio Disc (LPs) _____
- Open Reel Audio Tape (½" ¼") _____
- Compact Audio Cassette _____
- Digital Audio Tape (DAT) _____
- Optical Media (CD, CD-R) _____
- Other: _____

Digital Files

- Digital Audio Files _____
- **Digital Video Files** _____

III. Digital Storage

This section describes your organization's current method for storage of digital audiovisual collections.

1. **How much data storage do you currently need for your digital audiovisual collections? Estimate in GB or TB if you are able to.**
2. **Do you have a documented, consistent plan or workflow for the long-term storage of digital audiovisual files? If so, describe it.**
3. **Which of the following digital storage methods do you use, if any?**
 - Stand alone hard drives
 - Computer hard drives
 - Thumb drives
 - Network servers
 - Cloud storage services
 - Other (please name):
4. **Does your organization have a backup system for your digital audiovisual files? If so, please describe.**
5. **Does your organization have a person or IT department who is responsible for managing digital storage? If so, who is it?**

IV. Access

This section addresses how your organization and its constituents access your audiovisual collections. Use this section to begin thinking about any areas that you would like to change, improve, or establish digital access.

1. **How are your audiovisual collections currently accessed internally? (If no access is available, note that here).**
2. **What is your goal for internal access to your audiovisual collections?**
3. **How are your audiovisual collections currently accessed externally? (If no access is available, note that here).**
4. **What is your goal for public access to your audiovisual collections?**
5. **What digital access topics would you like to improve upon or learn more about (Rank in order of priority, 1-5)?**

_____How to stream video or audio for the public

_____How to provide an online catalog of materials for external use

_____How to allow users access to digital materials offsite

_____How to allow users access to digital materials onsite

_____Other (please name and describe): _____

V. Intellectual Control

This section addresses the level of intellectual control (inventory information, cataloging information, and related documentation) the organization has over its collection.

1. **Do you have an item level inventory of your audiovisual collections? If yes, what system or format is it in (for example, excel, TMS, Word, paper document, etc.)**
2. **Do your physical items have unique identifiers, accession numbers, catalog numbers, or other? If so, please describe.**
3. **Does your organization use a consistent file naming structure for your digital collections? If so, please describe.**
4. **Do you have a system for locating your analog collection items? If so please describe (for example, shelf numbers, barcodes, unique location numbers, etc.)**
5. **How do you find digital files in your collection? Please describe.**

VI. Rights

This section addresses the legal rights and copyrights of your audiovisual collection. Use this section to define areas in which improved rights information will help you to achieve your digital readiness goals.

1. **Does your organization know the copyright status of your audiovisual collection?**
2. **Does your organization own the copyright to any portion of your audiovisual collection? What parts?**
3. **Are there cases where the unknown copyright status of your audiovisual collections prevents you from moving forward with digitization and preservation projects?**
4. **Does your organization have a process for limiting access to sensitive materials, personal materials, or materials with cultural restrictions? If no, would this be helpful for you?**
5. **Does your donation form include language that gives your organization rights to preserve, stream, or provide re-use of donated materials? If no, is it a priority for you to develop such a process or policy as part of becoming digitally ready? (If your organization does not have a donation form, see the [Plan and Prioritize section](#) of the Digital Readiness Toolkit for instructions on creating one.)**

VII. Define Digital Projects

In this section, you will begin to brainstorm ideas for digital projects that support your digital readiness goals, based on your survey answers.

Review the list of digital project example types below. List as many specific projects under each heading that you can think of. Use your previous answers in the survey to generate ideas. If you do not have a project for a heading, skip it.

- **Digitize analog audiovisual assets such as films or magnetic media (list specific collections that are a priority for you)**
- **Migrate digital files from optical media, such as DVDs or CDs, to more stable storage**
- **Reformat digital files from their original formats to a preservation standard (i.e. non proprietary formats)**
- **Transcode or edit files so they can be used for different purposes, such as for editing or streaming**

- **Create and implement a digital file naming structure**
- **Assess and prioritize born-digital files to determine what to keep and preserve**
- **Check the health of existing digital files, such as running checksums**
- **Identify long term digital storage needs following the 3-2-1 rule**
- **Monitor and update digital storage environments**
- **Add descriptions or create transcriptions to make audio and video recordings more accessible**
- **Other (please specify)**

Of the projects you listed above, what would you consider the top five priority projects as of right now? (You can always change your answer)

- 1.
- 2.
- 3.
- 4.
- 5.

VIII. Narrative Survey Reflection and Summary

Go back through all of Section One and briefly review your answers. List any questions here that you were unable to answer or concepts that were unclear to you that you would like to come back to. Note any major issues or themes that emerged as you filled out the Narrative Assessment.

AUDIOVISUAL DIGITAL READINESS SELF-ASSESSMENT SURVEY

Part Two: Focus Area Assessment

In the first part of the survey, you reviewed your organization's big picture activities and defined your digital readiness goals. In this section, you will look at specific key activities that help you to meet those goals. As you go through the key activities, you will get a sense of where your organization's strengths and challenges are, and you will generate a list of specific activities that will support you in advancing your digital readiness.

This section is divided into seven Focus Areas. Each Focus Area is divided into bronze, silver, and gold sections containing the key activities. In each section below, check off the box next to the activity that best describes what your organization has done or is in the process of doing. At the end of each focus area is a summary section where you will self-define as bronze, silver, or gold in each category. Then list the key activities that feel like a high priority for you to complete.

These key activities are a bit more detailed than what you'll find in the Focus Area sections of the Digital Readiness

Toolkit. They cover the same ground but more carefully, so that your organization can fully assess its place in the Digital Readiness Levels.

This is not a test. The point is not perfection. This is an exercise for self-reflection and discussion so that your organization can have better clarity on next steps. No organization is expected to have all or even most of the key activities completed. Be mindful to not get stuck on exactly what activities are right for you at this stage. Make your best educated guess and work collaboratively. You can always go back and revise your answers.

Focus Area 1: Plan and Prioritize

Digital projects can be more complex and take more time than you may expect. It's helpful to start small, set realistic goals, and define roles and tasks in advance. In other words, develop a plan to guide your work.

Select the activities your organization has completed:

Bronze Level (Lay a Strong Foundation): Key Activities

- Articulate your organization's goals for digital work.
- Assess collections for digital projects.
- Identify digital projects, such as:
 - What level of inventory is appropriate for the collection
 - Digital storage development
 - Target preservation formats
- Identify potential project partners, stakeholders, and community resources that can support your projects.
- Identify existing resources, as well as resources that need to be acquired for:
 - Funding
 - Staff
 - Equipment
 - Content Management
 - Digital Storage

Silver Level (Put into Practice): Key Activities

- Define foundational projects that need to take place before your digital project, such as:
 - Collection inventory and assessment
 - Digital storage planning
- Prioritize a digital project.
- Acquire/gather resources needed to support your digital project plan.
- Get input from project partners and stakeholders as you develop the plan and keep partners informed throughout the process.

Gold Level (Refine and Sustain): Key Activities

- Create a detailed plan for a high-priority digital project.
- Gather ideas and examples of digital collection development policies.
- Draft a digital collection development policy and obtain feedback from stakeholders.
- Finalize and adopt the policy.

Summary of Focus Area 1: Plan and Prioritize

What level would you describe your organization (Bronze, Silver, Gold)? Why?

List one or two key activities in this focus area that are a high priority for you.

Focus Area 2: Obtain Permissions

Determining the copyright status of the digital materials you will make available online can seem daunting, but there are tools available to help you assess your organization's risks and responsibilities. Before you get started, think about the following:

- Owning a physical item does not necessarily mean you hold the copyright to that item.
- Digitizing an item does not change its copyright status or create a new copyright.
- Regardless of copyright status, there may be ethical and privacy considerations about how items are displayed or used.

Select the activities your organization has completed:

Bronze Level (Lay a Strong Foundation): Key Activities

- Adopt a deed of gift form that includes language about online access to digitized and born-digital content or update existing deed of gift form.
- If creating new digital content, such as oral history interviews, use a permission form that includes language about online access or update existing permission form.
- Identify existing documentation that may inform copyright permissions: deeds of gift, donor permission forms, or correspondence with donors.
- Identify items not covered by copyright (in the public domain).

Silver Level (Put into Practice): Key Activities

- Gather existing documentation that may inform copyright and permissions: deeds of gift, donor permission forms, or correspondence with donors.
- Identify items not covered by copyright (in the public domain).

- Review items to determine whether privacy, ethical, or cultural considerations will determine appropriate access.
- Make determinations about appropriate access to items covered by copyright and in the public domain.

Gold Level (Refine and Sustain): Key Activities

- Use standardized rights statements or Creative Commons licenses to describe the copyright status of digital items.
- Develop a conditions of use statement.
- Develop a takedown policy.
- Develop a statement or notice about potentially harmful content.

Summary of Focus Area 2: Obtain Permissions

What level would you describe your organization (Bronze, Silver, Gold)? Why?

List one or two key activities in this focus area that are a high priority for you.

Focus Area 3: Digitize

Digitization is the process of making a digital copy of a physical object — for instance, scanning a document, using a digital camera to photograph an artifact, or converting an audiocassette recording into a WAV file. Another common term for this process is reformatting.

Your goal here is to create a digital file that represents the original item as accurately as possible, using recognized standards that will keep the file usable for years to come. Keep in mind that this digital file will need ongoing care and storage, just as proper care and storage is still needed for the original physical object (See the Store and Maintain section of the Toolkit for more on caring for your digital files).

Select the activities your organization has completed:

Bronze Level (Lay a Strong Foundation): Key Activities

- Determine if the project will be done in-house or outsourced to a vendor.
- Identify target file format specifications, including resolution, bit depth, sample rate, wrapper, encoding, and other standards you will need to digitize materials.
- Adopt a file naming convention and document it.
- Prepare a project plan or statement of work.
- Estimate digital storage needs for materials you will digitize.

Silver Level (Put into Practice): Key Activities

- Prepare physical materials for reformatting.
- Complete a pilot project. Digitize a handful of items to check quality of digitized files and make sure selected standards will give you the results that you want.
- Document your workflow. Create a step-by-step outline of your digitization procedures.

Gold Level (Refine and Sustain): Key Activities

- Develop a list of quality control guidelines.
- Determine who is responsible for quality control.
- Use a log to track digitization work and quality control reviews.

Summary of Focus Area 3: Digitize

What level would you describe your organization (Bronze, Silver, Gold)? Why?

List one or two key activities in this focus area that are a high priority for you.

Focus Area 4: Describe

Descriptive information about your digital content, called metadata, helps users find your items, understand their contents and origins, reflect on your community's history and values, and make sense of how they may use the materials.

Select the activities your organization has completed:

Bronze Level (Lay a Strong Foundation): Key Activities

- Review the description gathered during the planning phase. Determine what additional metadata can be added, including more detailed content or technical information.
- Identify and/or create controlled vocabulary lists to use when creating metadata.
- Determine who is responsible for updating the inventory. Consider a [community-based inventory day](#).

Silver Level (Put into Practice): Key Activities

- Determine the [metadata standard](#) that you will use and how the metadata fields apply to your collections.
- Inventory: create metadata for items.
- Update existing metadata.

Gold Level (Refine and Sustain): Key Activities

- Create a data dictionary to document the standards you will use for metadata.
- Create standardized, text-based, metadata records to store with your files.

Summary of Focus Area 4: Describe

What level would you describe your organization (Bronze, Silver, Gold)? Why?

List one or two key activities in this focus area that are a high priority for you.

Focus Area 5: Share

This section is all about access. Who will access the digital content you're creating or acquiring? Where and how will they access it, and for what purpose? The appropriate level of access may vary depending on the content. You might share some items openly online with no restrictions. Other materials might be made available to certain researchers on-site only, due to copyright considerations, cultural protocols, or other factors.

Select the activities your organization has completed.

Bronze Level (Lay a Strong Foundation): Key Activities

- Review options for providing access to digital content via a content management system (CMS) or other access platform.
- Choose access options that meet your needs and goals.

Silver Level (Put into Practice): Key Activities

- Add digital collection items and related metadata to your content management system (CMS) or other access platform(s) .
- Identify partnership opportunities to make your items more widely discoverable.

Gold Level (Refine and Sustain): Key Activities

- Create and provide alternative text descriptions for all visual images shared online.
- Create and provide searchable full text for all text materials shared online.
- Create and provide transcripts or captions for all audio and video recordings shared online.
- Engage in new partnerships that help make your items more widely discoverable and encourage use.

Summary of Focus Area 5: Share

What level would you describe your organization (Bronze, Silver, Gold)? Why?

List one or two key activities in this focus area that are a high priority for you.

Focus Area 6: Store and Maintain

The activities in this section of the Toolkit will help put your organization in a position to manage your digital content over time, across generations of technology, so that the files you create or collect today can be opened and used 5, 10, or 50 years from now.

Select the activities your organization has completed:

Bronze Level (Lay a Strong Foundation): Key Activities

- Create a [collection-level log](#) to document existing and incoming digital collections.
- Review and assess current storage methods and locations, including servers, hard drives, thumb drives, etc.
- Confirm digital storage estimates for materials you have digitized and plan to digitize.
- Review existing digital collections and determine what digital projects are needed. For example:
 - Move files onto long term storage or off of unstable hard drives
 - Create reference files for playback
 - Rename files according to a standard naming convention
 - Develop a long term digital preservation strategy
 - Determine what digital materials should be kept
 - Determine how you will check the integrity of your digital files (fixity)
 - Transcode proprietary file formats to an open source file format

Silver Level (Put into Practice): Key Activities

- Determine at least one location within your organization where you will store a copy of each digital object – including the preservation master and access copy – and its related metadata.
- Determine at least one location off-site where you will store a copy of each unmodified primary file and its related metadata.
- Move copies of files to their storage locations.

Gold Level (Refine and Sustain): Key Activities

- Develop a best practice storage plan for digital materials, including backup and long-term storage.

- Document your storage decisions. Where is it? Who can access it? How?
- Document procedures used for any file checking tools and perform checks on a regular schedule.
- Implement best practice storage plan for digital files.
- Create a schedule and workflow for checking storage locations at least annually.

Summary of Focus Area 6: Store and Maintain

What level would you describe your organization (Bronze, Silver, Gold)? Why?

List one or two key activities in this focus area that are a high priority for you.

Focus Area 7: Evaluate

As you move through the Digital Readiness Levels, take time to review and reflect on your work on a regular basis. Evaluation is both outward-looking — how is our work making a difference for our users and our community? and inward-looking — what have we learned? How can we improve or evolve our work?

Although this section comes last in the Toolkit, evaluation is best approached as an ongoing mindset. Continually refer back to the core “Check as You Go” questions in the Digital Readiness Levels:

- Is it documented?
- Is it sustainable?
- Is it appropriate, relevant, and/or accessible?
- Is it working?

Select the activities your organization has completed:

Bronze Level (Lay a Strong Foundation): Key Activities

- Define stakeholders such as administration, funders and community members.
- Define user groups and their information needs.
- Develop outreach ideas, plans, or strategies.

Silver Level (Put into Practice): Key Activities

- Gather information about how your collections are being used, such as research inquiries or reproduction requests.
- Consider using tools such as Google Analytics or Facebook Page Insights to gather data about views and searches.

- Check in with stakeholders, gather feedback, survey.

Gold Level (Refine and Sustain): Key Activities

- Document lessons learned and ideas for how to apply what you've learned to future projects.
- Connect and collaborate with other practitioners engaged in digital work.
- Implement stakeholder feedback with new programs or projects.

Summary of Focus Area 7: Evaluate

What level would you describe your organization (Bronze, Silver, Gold)? Why?

List one or two key activities in this focus area that are a high priority for you.

AUDIOVISUAL DIGITAL READINESS SELF-ASSESSMENT SURVEY

Part Three: Pathway to Digital Readiness Plan

In this section, you will review and synthesize your findings from the first two sections. You will use this section to:

- Define your digital readiness mission
- Create a list of digital projects that will help you to achieve your digital readiness mission
- Choose one to three digital projects as high priority and move onto the planning stage for the project(s) using the Toolkit

Define a Digital Mission Statement

In this section, you will use your survey responses to create or revise a digital mission statement. You can use the following prompts to create the statement, and you can see examples of other digital mission statements in the [Plan and Prioritize](#) section of this Toolkit.

Digital Mission Statement prompts:

- How does digital readiness support the overall mission of your organization?
- How does digital readiness improve access?
- How does digital readiness support your community?
- How could digital readiness expand opportunities for programming or education?

Define Strengths and Challenges

Consider resources that you already have that can support a digital project. Consider how you can build community and support into a digital project.

What are the greatest strengths in digital readiness for your organization? Consider existing equipment, access to education, staff knowledge, completed digitization projects, a trusted vendor, digital storage space, resources in your community, etc. Try to list at least three strengths.

What are the greatest challenges in digital readiness for your organization? Consider lack of equipment, expertise, and available resources, etc.

Focus Area Summary

Go back to each summary you wrote for each of the seven focus areas in Part Two: Focus Area Assessment. Below you will list the key activities that you named as a priority in each Focus Area.

- **Under each Key Activity:**
Describe how the activity specifically relates to your organization. (1-2 sentences)
Describe why the activity is a challenge. (1-2 sentences)

Example

Key activity: Create a [collection-level log](#) to document existing and incoming digital collections

We have digital recordings of all of our lectures from 2019 stored on hard drives. The hard drives are all stored in an office space. This is a challenge because we do not know what files are on what hard drives. If we create a log of these hard drives, we will know where the files are. We aren't really sure what the protocol is for creating a log.

Example

Key Activity: Adopt a file naming convention and document it.

We have no file naming convention in place. No one is sure how to name files when they come in, and it's hard to keep track of files. We could use guidance on how to create a file naming convention.

Focus Area 1: Plan and Prioritize – Key Activity

How does this activity relate to your organization?

What about this key activity is a challenge for your organization?

Focus Area 2: Obtain Permission – Key Activity

How does this activity relate to your organization?

What about this key activity is a challenge for your organization?

Focus Area 3: Digitize – Key Activity

How does this activity relate to your organization?

What about this key activity is a challenge for your organization?

Focus Area 4: Describe – Key Activity

How does this activity relate to your organization?

What about this key activity is a challenge for your organization?

Focus Area 5: Share – Key Activity

How does this activity relate to your organization?

What about this key activity is a challenge for your organization?

Focus Area 6: Store and Maintain – Key Activity

How does this activity relate to your organization?

What about this key activity is a challenge for your organization?

Focus Area 7: Evaluate – Key Activity

How does this activity relate to your organization?

What about this key activity is a challenge for your organization?

Turn the Key Activities into Digital Projects

Using the list above, name 1-3 high priority digital projects that you would like to complete in the next 1-2 years. You can simply list your top three Key Activities above, or you can decide to create a digital project that combines several related key activities. Give the project a name, such as the *Collection Inventory Project*, the *Digital Storage Planning Project*, or the *VHS Digitization Project*.

- 1.
- 2.
- 3.

Plan Your Digital Project

In this section, choose one high priority digital project from the list above and create the outline of a plan for the project. This plan can help you get started on your project or seek funding to start the project. Once you have one project plan complete, you can create plans for your other priority digital projects as well.

Our Current High Priority Digital Project is:

Use the [Digital Project Planning Worksheet](#) and the Toolkit resources to create a detailed outline and budget for the digital project.

As you complete a Digital Project Planning Worksheet for your project, consider these questions:

1. Where will funding come for the project?
2. Who will the project serve?
3. What roles are required and do you know who will fill them?
4. What ways can you involve the community in the project (shared space or resources, learning opportunities, etc.)
5. What resources from the Toolkit will help you with your project?
6. Are there other resources that are not in the Toolkit that would help you with your project?

PART III

APPENDICES

Appendix A: Create a Preservation Prioritization Plan

Overview

The purpose of a Preservation Prioritization Plan is to help an organization know what items should be prioritized for preservation based on content and physical fragility. It is intended to be an at-a-glance overview of the collection that simplifies the decision of what to preserve first. It is especially helpful when applying for preservation funding. In the case of digital readiness, the term “preservation” in this document refers to digitization at the preservation level deemed suitable by the organization or individual. It is recommended to develop target preservation file formats before creating a preservation plan, as these will inform your decision about what items you consider to be already preserved.

This preservation prioritization method was developed by members of the Community Archiving Workshop for the Smithsonian Institution in 2019 as part of the [Audiovisual Preservation Readiness Assessment Project \(AVPRA\)](#). It was used to assist units within the Smithsonian in making preservation decisions for audiovisual collections. It specifically addresses audiovisual formats, but can be adapted for use in paper, photographic, and other collection types.

The plan combines numeric data describing the inherent physical fragility of the collection item with narrative data from collection caretakers to determine what collections are a priority for preservation. It groups collections into “series” based on the content, format, donor, or any other grouping method the organization chooses, and places them in the following categories:

- Highest Priority
- Medium Priority
- Lower Priority
- Preserved
- Not Included in the Preservation Plan

The plan is intended to be a guide, and to change over time or according to funding sources. Ultimately, it is the collection caretakers who are best equipped to identify the priorities for their collections.

Before You Create a Preservation Prioritization Plan

The Preservation Prioritization Plan is the result of a data gathering process that must take place before the plan is assembled. The data gathering process is the foundation which supports and backs up the plan. Before the plan is written, the organization must complete the following three steps:

1. Item level inventory of the A/V collection

It is ideal to [inventory the entire A/V collection](#), but if you have a good representative inventory of part of the collection, it is possible to work from that.

2. Physical Fragility Scoring added to the Item level inventory

The Physical Fragility Scoring method (see Part 3 of this Appendix) assigns a number to each type of A/V media, based on its expected inherent fragility. For example, a U-matic tape will be assigned a “1”, because it is very fragile and playback equipment is scarce, and a compact audio cassette will be assigned a “2” because it is more stable, likely to have better longevity, and playback equipment is still being produced. This scoring will provide the organization with a clear understanding of what the most at-risk items are in the collection.

3. Preservation Prioritization Planning Interview

The Preservation Planning Interview is a brief interview with one or more stakeholders (staff, staff emeritus, media creators, etc.) who care for the A/V collection and have a strong understanding of its cultural value, history and the mission of the organization. This interview helps to categorize the collection into series and defines each collection’s preservation status.

Once the above three steps are complete, this information is synthesized into the **Preservation Prioritization Plan**.

A note on the audience and writing style: The Preservation Prioritization Plan may be intended for an organization, but it’s helpful to write the plan assuming that the audience is not familiar with the collection. This way, any future audience will understand the plan as a stand-alone document, and the organization may be able to pull language directly from the plan for use in advocacy and grant writing efforts.

Preservation Prioritization Plan Template

Preservation Plan

Name of Organization

Date

Organization Contact: [name]

Plan Preparer: [name]

Part One: Overview

About this Preservation Prioritization Plan

Describe the project, its history, and any other relevant introductory information.

The following documents were used to create this Preservation Prioritization Plan:

- Sample collection inventory
- Preservation plan interview
- *Describe any other documents used to gather data for the preservation plan here*

This Preservation Prioritization Plan is meant to be used as a guide and support to your organization as it plans for digitization and preservation of its audiovisual collection. Organizations are encouraged to self-assess and revise

a preservation prioritization plan annually. As preservation status of the collection changes, and as you gain information about its collection, preservation priorities will change.

About the Collection and the Organization

Paragraph One: Describe the organization, its relationship to its A/V collection, the general content and value of the A/V collection, and include any relevant links, such as organization website and streaming media.

Paragraph Two: Describe the goal of the organization for digitizing and providing access to its collection. Describe any access concerns or restrictions. Describe any important or relevant past or upcoming digitization initiatives. How did they go? Does any work need to be re-done?

Paragraph Three (optional): Describe anything else that is unique to the organization and collection that will help the reader contextualize the Preservation Prioritization Plan.

Paragraph Four: Describe the goal of this Preservation Prioritization Plan, and its intended use.

About AVPRAPPS

Below is language that you can include in your Preservation Prioritization Plan to explain the background of the system on which the plan was developed.

The system for creating this Preservation Prioritization Plan is based on the Audiovisual Preservation Readiness Assessment Preservation Prioritization System (AVPRAPPS). This system was developed by members of [Community Archiving Workshop](#) for use by the Smithsonian Institution in 2019 as part of a multi-year project to inventory and evaluate audiovisual collections across the institution¹.

The purpose of the AVPRAPPS system is to develop a list of priority collections for preservation based on:

- The fragility of the format
- The importance and uniqueness of the content to the organization
- The preservation status of the collection

AVPRAPPS uses numeric data and narrative data to provide an overview of collection needs. It is intended to be a starting point for directing preservation. Curatorial and organizational input is always primary. Ideally, AVPRAPPS should be administered by the organization annually since collection needs change as collections age and as preservation projects evolve.

There are two parts to AVPRAPPS. The narrative interview requires that the organization list the collections most important to them, and provide data about the collections, including formats, a brief description of content, and the preservation status of the collection (preserved, not preserved, partially preserved, copied but not to preservation standards). The numeric part of AVPRAPPS assigns a base score and a final score to each format based on its inherent fragility. The system is numbered 1-5, 1 being of highest fragility, and 5 being of lowest fragility. If an asset is stored in an unstable environment, or shows signs of severe decay (mold, vinegar syndrome, sticky shed, etc.), it will be reduced by one numeric value. The base score is the score given to the format, and the final score is the revised score.

1. You can read the publicly available results of that project here: https://siarchives.si.edu/sites/default/files/pdfs/AVPRA_Final%20Report_v20190717.pdf

For example, a VHS tape is rated a “2” on the AVPRAPPS scale. If the tape shows signs of mold growth, its score is reduced by one point. Its base score is “2”, and its final score is “1”.

If an item’s base score is “1”, but it has a condition issue, its score remains “1”. For example, a ¼” open reel audio tape has a base score of “1”. If it shows signs of vinegar syndrome, its score remains “1”. The condition field in the inventory will help guide the AVPRAPPS user in determining what items scoring a 1 may be of higher priority.

A copy of the AVPRAPPS scoring guide is included in this appendix. As formats age, and as the equipment to play them back becomes obsolete, some format types may move up the scoring system, and have a higher base score. Please check the Community Archiving Workshop website for updates if you reassess your collection.

Part Two: Collection Overview

Describe the estimated AV format types and number of each in the collection. Use the inventory that you created, in addition to any interviews or supplemental information that you have.

The following is an estimate of the number of items in the collection by format.

- Format: number
- Format: number
- Format: number
- Format: number
- Format: number

It may be useful to break down the format types and amount each of the formats that were inventoried in the inventory process, if it is different than above.

The following is the number of items inventoried on DATE/S

- Format: number
- Format: number
- Format: number
- Format: number
- Format: number

Part Three: Priority Audiovisual Collections for Preservation

This section prioritizes the collections for preservation based on physical fragility and the content, as determined by the organization in the Preservation Prioritization Interview. Since most organizations are unable to preserve everything in their collection at once, this is intended to be used as a guide to support an organization in deciding

which collections will be preserved first. This report recognizes that the organization is best situated to make decisions about collection care.

Highest Priority Collections

These collections meet the following criteria:

- They are listed as having high content value by organization staff
- They are unpreserved
- The formats in the collection are 1-2 on the AVPRAPPS scale

Collection Title

Description:

Formats:

AVPRAPPS Base Scale for this format (scale of 1-5 from unstable to most stable):

Amount:

Dates:

Notes:

Preservation Status: (unpreserved; preserved; partially preserved; preserved but not to standards; preservation in process)

Medium Priority Collections

These collections meet the following criteria:

- They are listed as having high content value by organization staff
- They are not preserved or partially preserved but preservation is not ongoing
- The main formats in the collection are 1-2 on the AVPRAPPS scale, though some formats may be at 3

Collection Title

Description:

Formats:

AVPRAPPS Base Scale for this format (scale of 1-5 from unstable to most stable):

Amount:

Dates:

Notes:

Preservation Status: (unpreserved; preserved; partially preserved; preserved but not to standards; preservation in process)

Lower Priority Collections

These collections meet the following criteria:

- They are listed as having high content value organization staff
- They are preserved or preservation is currently active and in progress
- And / or formats have a 4-5 rating on the AVPRAPPS scale

Collection Title

Description:

Formats:

AVPRAPPS Base Scale for this format (scale of 1-5 from unstable to most stable):

Amount:

Dates:

Notes:

Preservation Status: (unpreserved; preserved; partially preserved; preserved but not to standards; preservation in process)

Preserved Collections

These are collections that are fully preserved and are not currently on the priority list. They are worth noting and tracking, however, and may be put back on the list if further preservation or a new method of preservation is needed in the future.

Collection Title

Description:

Formats:

AVPRAPPS Base Scale for this format (scale of 1-5 from unstable to most stable):

Amount:

Dates:

Notes:

Preservation Status: (unpreserved; preserved; partially preserved; preserved but not to standards; preservation in process)

Collections Not Currently Included in The Preservation Plan

These are collections that have not been fully evaluated yet and may be or may become a priority. It is recommended that the organization continue to survey these collections and include them in their next Preservation Prioritization Plan.

Appendix B: Collection Level Log

[Download a Collection Level Log example that you can adapt for your own use at Recollection Wisconsin.](#)

Appendix C: Audiovisual Collection Inventory and Instructions

Introduction & Resources

This page offers guidelines and explanations on how to use the Audiovisual Collection Inventory Template provided by the [Community Archiving Workshop](#) and [Recollection Wisconsin](#). You may download a copy of the inventory spreadsheet [here](#). This is your copy, and you may modify the fields as you see fit for your own collections. In addition, [Audiovisual Formats: A guide to identification](#) will aid you in visually identifying the many different audiovisual formats you might encounter.

Using this inventory template, you will document **metadata** that can mostly be gathered from looking at the objects themselves. Keep in mind that you may not be able to fill out every detail for every object – feel free to use “Unknown” as a value.

Assess condition and use caution before playing items in your collection to gather more details. Loanable kits for inspecting and playing audio and video formats are available from Community Archiving Workshop.

An item-level inventory can help you make plans and priorities for digitization of your collections to locate, preserve, and increase access to the content. This inventory can be used to estimate the cost of digitization, rehousing, and storage, and can be vital to tracking the progress of work whether you are reformatting your material in-house or with an outside vendor. Identifying and locating your most valuable collections will help you consolidate by location so it's easier to find and evacuate them in the event of an emergency.

If you would like overall guidance on how to get started using this document to inventory the collections at your organization, please contact communityarchivingworkshop@gmail.com to set up a short consultation.

Getting Started on Your Inventory Project

Preparing your sheet and items

The first step is to decide what you will be inventorying and to get your inventory sheet or form ready. We suggest saving the provided template as your master document, and creating a copy and renaming it to match your specific library, museum, or archive and collection. If multiple people will be working on the inventory, you can create a copy of the Google form to Google drive and share the link with everyone who needs it to enter data. Remember

to save your version of the sheet/form with your name in the title of the file, and send a link to the holding organization so they will have a copy of your inventory.

If your items do not already have unique IDs and you plan to add identifiers during this process, you should gather some paper labels or a marking pen to write the identifiers on your object before beginning the inventory. Finally, a ruler can be useful when identifying formats.

Understanding how the inventory sheet works

In the inventory template, we have entered data for a sample item, a VHS tape, in the second row. It may be useful to look over this sample data before you start your own inventory. Remember that each row in the sheet represents a single physical item, and it will be common to not be able to fill out every field for every item – in these cases leave the field blank. The inventory is the first step in a longer process and your goal for now is to get a baseline amount of information to start making preservation plans and priorities.

Understanding how to identify different audiovisual formats

The [provided guide](#) to understanding audiovisual formats contains a wealth of information and images which will assist you as you are inventorying. If you come across an item whose format you do not recognize, check it against the images included in the guide.

Inventory Sheet Data Entry Guide

Field	Description
Holding Organization	Name of the organization whose collection is being inventoried
Storage Location	Enter the permanent storage location of the item (Building/Room/Shelf). Noting the permanent location, whether a shelf number or the name of a room, can help you link the item on this inventory back to the item itself. If unknown, leave blank.
Unique ID #	Unique identifier assigned to and written on the item that will help match the item back to this inventory sheet. This could be a barcode, or could be a temporary number or letter-number combination. Use the unique identifier system that the organization already uses. This is also an opportunity to develop a new numbering system if you need to. For example: year/period/four digit number (2018.0456). If you assign unique IDs, be sure to label clearly.
Other IDs	Items may have old IDs from previous collection inventories. Be sure to note those, even if you have assigned a Unique ID. If unknown, leave blank.
Box #	Use if applicable. This is a number that would have been assigned to the box that holds the item prior to the inventory being taken. If unknown, leave blank.
Collection Name	Identify which collection this item belongs to, if any. If unknown, leave blank.
Title on Item	Capture clearly indicated title on label or item, or if specified by collection stewards.
Creator(s)	Person(s) or organization(s) responsible for creating the item. Format consistently and separate multiple entries with a semicolon: Last name, First name, role; Last name, First name, role. Example main credits: Producer, Director, Interviewer; Writer. If unknown, leave blank.
Contributor(s)	General catchall for other credits. Format consistently and separate multiple entries with a semicolon: Last name, First name, role; Last name, First name, role. Example additional roles: Camera; Cast; Editor; Interviewee; Music; Musician; Sound; Speaker. If unknown, leave blank.
Date on Item	Transcribe any information on the label or item that identifies the date of the recording. Format consistently: YYYY-MM-DD or YYYY-MM or YYYY. If unknown, leave blank.
Content Description	If information regarding content is available, list it here. Capture information regarding content. Include all relevant info as it is recorded on item label(s) - visible at first glance. If unknown, leave blank.
Rights	Known copyright date(s), copyright holder(s), access restrictions and other relevant information. Record any information regarding copyright noted on the item. If unknown, leave blank.
Annotations	All relevant info as it is recorded on housing and item label(s). Record all text verbatim. Indicate where annotations are found (container or recording itself; face or spine). Include alternate titles, list of titles for compilations, or additional credits. Use semicolons between lines of content. If there are checked boxes for technical specs, record all boxes checked. If some annotations are illegible, indicate in brackets. If no annotations are listed on the container or case, leave blank.
Condition Notes	Enter any information you can determine about the condition from looking at the object. For example: dusty, case cracked, case missing, evidence of mold, loose wind, slide cracked, sticky, smelly, footage is fuzzy, audio is unclear, etc. Use consistent vocabulary.
Media Type	General nature of the content. Use controlled vocabulary.
Format	Additional detail about the medium if known. See the format identification guide if you need help. If unknown, leave blank.
Extent	Number of parts - tapes, reels or pages per item.
Approximate Duration (AV only) or Approximate Dimensions (Print only)	For audiovisual recordings, approximate total run time. If unknown, capture maximum tape length (written on the box or tape). Be consistent with format, e.g. hh:mm:ss. For print materials, record dimensions, if possible. Measurements of width and height in inches, e.g. 8 1/2 x 11 in. Use whole numbers or fractions (no decimal values). If unknown, leave blank.
Color/B&W	For moving image media. Is it in color or black and white? Listed on label or identified during inspection. Use controlled vocabulary. If unknown, leave blank.
Audio Information	For moving image media. Look for information on label or identify during inspection. Use controlled vocabulary. If unknown, leave blank.
Carrier	Identify the carrier of the item (film on REEL, film on CORE, video or audio CASSETTE). Use controlled vocabulary.
Housing	Identify the housing that the item is stored in, if any (film CAN, video CASE, Audio CASE, etc.). Use controlled vocabulary.
Film Element Type	Is the film a positive print, reversal, or a negative? Use controlled vocabulary. If unknown, leave blank.
Film: Estimated Footage Length (ft.)	Approximate film length with a film ruler, look for notch marks on the film reel, or check labels for information. If unknown, leave blank.
Film Edge Code	Series of shapes that are visible on Kodak stock only, which designate the year the film was produced (but not necessarily exposed and processed). Consult the NFPF Film Preservation Guide: https://www.filmpreservation.org/userfiles/image/PDFs/fpg_10.pdf If unknown, leave blank.

Field	Description
Reel Diameter (inches)	Measure the physical diameter of all reels (film and audio) in inches. This information can help you approximate duration.
Base Material Type	Identified during inventory or listed on label. Is the film or videotape polyester, acetate, or a combination? Use controlled vocabulary. If unknown, leave blank.
Access Restrictions	Are there any known restrictions on who can view this item based on the content for legal or ethical reasons? If unknown, leave blank.
Notes	This is a field to include any additional information you think could be useful that did not fit into any of the other fields. If nothing to add, leave blank.
Preservation Priority	Consider the physical condition of the item and value of its content. For example, is the item damaged or an obsolete format? Is it unique or rare? Is it historically significant? Is it important to your organization or community?
Date Inventoried	Enter the date the item was inventoried. Format as: YYYY-MM-DD, e.g. 2018-10-09.
Inventoried By	Enter the name of the person completed the record.

USING AN ITEM LEVEL COLLECTION INVENTORY FOR COLLECTION MANAGEMENT AND PRESERVATION PLANNING

Why Create an Item Level Inventory?

An item level inventory is a powerful tool that allows the user to generate information necessary for preservation planning, digitization, and fundraising. Item level inventories are especially important for audiovisual materials, in part because one tape or film reel can hold so much technical and content metadata.

Ways an inventory can be used include:

- Locating and tracking physical collection items
- Estimating the running time of collections, which can be used to estimate the time (and cost) it will take to digitize them
- Tracking what audiovisual assets have been digitized
- Knowing how many audiovisual assets you have of each format
- Prioritizing collection items for preservation (using the AVPRAPPS System)
- Describing the content of the collection
- Providing research access to the collection
- Identifying access restrictions for certain items
- Capturing institutional memory (content, places, names, context, etc.)

This document walks the beginner user through some ways in which a CAW inventory— or any inventory created using an online spreadsheet— can be used to support collection preservation and access.

Why Use a Spreadsheet?

Some organizations track assets in their collections using cataloging software such as Past Perfect or The Museum System (TMS). Some organizations use a spreadsheet or software such as Air Table. For organizations just getting started on their collection inventory, Community Archiving Workshop (CAW) recommends using a simple spreadsheet. A spreadsheet is “an electronic document in which data is arranged in the rows and columns of a grid and

can be manipulated and used in calculations.” Google Sheets and Microsoft Excel are examples of spreadsheets. CAW recommends using a spreadsheet for the following reasons:

- They are free of charge to use, or relatively low cost
- The layout allows for fast data entry
- The layout and use can be learned in about an hour
- Data can be parsed out into discrete cells, which means that if the organization adopts another cataloging system in the future, data can be migrated directly into the corresponding fields
- Spreadsheets allow the user to create drop down menus, which allows for faster data entry and allows for the creation of controlled vocabularies (for example, “VHS” instead of “vhs”).
- Spreadsheets allow filtering and sorting (see below), so that you can create larger data about your collection. (for example, you can filter by “VHS” and see exactly how many VHS tapes you have)
- There is no need to purchase expensive cataloging systems or choose a complex cataloging methodology before creating an inventory of your collection

Once you have a spreadsheet, and an item level inventory, you have a wealth of information necessary to plan digitization projects and to write grants.

Sharing Online Spreadsheets (Google Sheets)

Currently, CAW uses Google Sheets to create inventories. Google Sheets is “a web-based application that enables users to create, update and modify spreadsheets and share the data online in real time.”¹ A Google Sheets inventory is not a document that needs to be downloaded in order to use. It lives in cloud based storage. Many people can log into a Google sheet at one time, no matter where they are, and enter data. The advantage to this is that the document is a living document that is always up to date, and that many people can work on it at once in your organization. The downside is that you may overwrite someone else’s information if you are working at the same time (though Google Sheets has a function that allows you to go back to earlier versions). CAW recommends saving Google sheets outside of the Google drive periodically. More on this below.

To use Google Sheets to inventory a collection, you need a link to access the spreadsheet, or you need to be invited as a user with editor capabilities. To create a link to the document, click on file > share > share with others. You will see options for emailing a link or creating a link. You will also have the option to allow people to access the document as a view only, a commenter only, or an editor.

Entering Data into the Spreadsheet

Google Drive is an online storage system that automatically stores any documents that you create using Google’s suite of tools. An inventory in Google Sheets will live in a Google Drive. When working with others to create an inventory:

DO

- Work in one spreadsheet
- Put all data into one spreadsheet tab, rather than in multiple tabs (this way, you can sort all of your data at one time. See the section on sorting below)

¹. Tech Target <https://www.techtarget.com/whatis/definition/Google-Spreadsheets>

DON'T

- Create multiple copies of the Google sheet
- Download the spreadsheet and work on it offline (this creates multiple versions and may result in loss of work)

Backing Up an Online Inventory Spreadsheet

Google or any online work or data processing platform will autosave your spreadsheet on their servers. However, it's recommended to periodically back up your work in other ways, rather than relying only on the software company alone. To back up your work, download a copy of the inventory at regular intervals (once a week, once a month), and store it on another cloud service, server, and hard drive. Any of these will do, but all three is best. You may also wish to print out a copy on paper. Remember this is for back up, do not work off the downloaded files.

Using the Data in Your Inventory

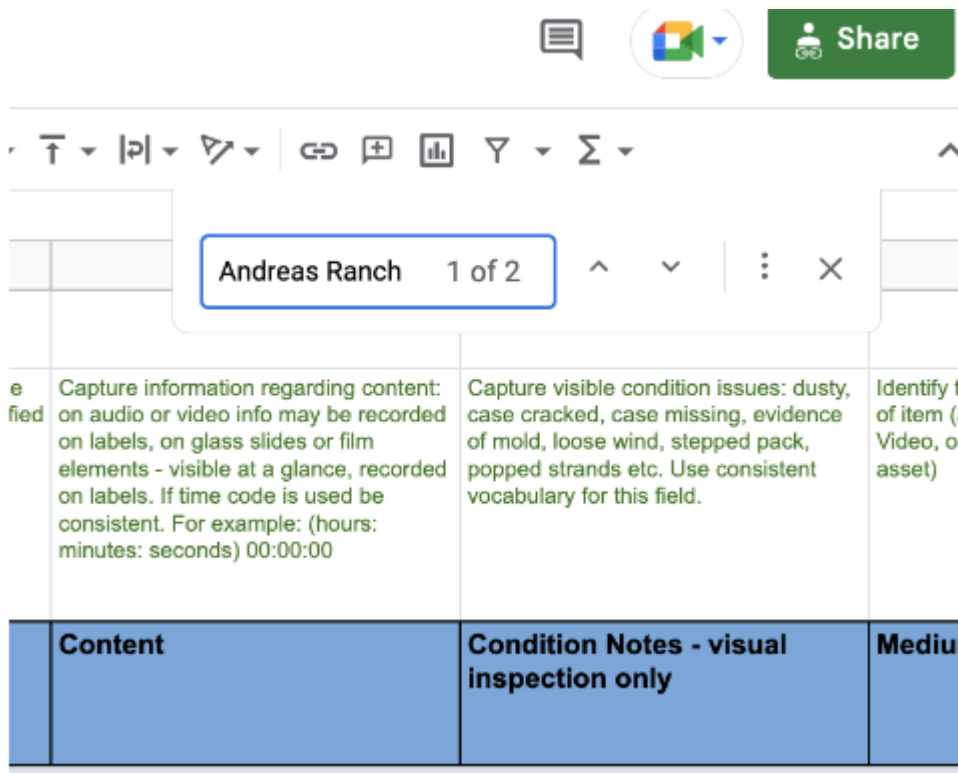
An inventory made in a spreadsheet is much more powerful than a list of items written on paper or in word processing documents. This is because data in a spreadsheet, if entered correctly, can be sorted and filtered, and numbers can be automatically added or averaged. For example, if you want to know how many VHS tapes you have, you can filter for VHS tapes and add up the results in a few seconds. Or, if you wish to estimate the running time of a collection so that you can estimate the time it might take to digitize the collection, a spreadsheet can do this for you quickly. In addition, if you or your organization ever decide that you would like to adopt a new database or content management system, you can migrate data directly from one field in the spreadsheet inventory into the corresponding field in your new database.

This section goes over how to perform the most common of these functions. CAW suggests creating a copy of your inventory that you only use for practicing these skills, so that you can practice using these functions without worrying about losing your data or changing the spreadsheet. Once you have a few of these functions down, you can easily search for items in the collection, quickly count how many of each format you have, and even estimate the running time of your collection— all essential in creating successful grant applications, a digital storage plan, or a digitization plan.

Searching for an item using the “find” function

This is super handy if you want to find a specific item. Think of it like using a mini search engine that only works on your document.

- Click command>F
- A box pops up in the upper right hand corner of your spreadsheet
- Type in any words or numbers associated with the item
- The spreadsheet will jump to the item or items
- Use the up and down arrows next to the search box to toggle between multiple items that meet the search criteria.

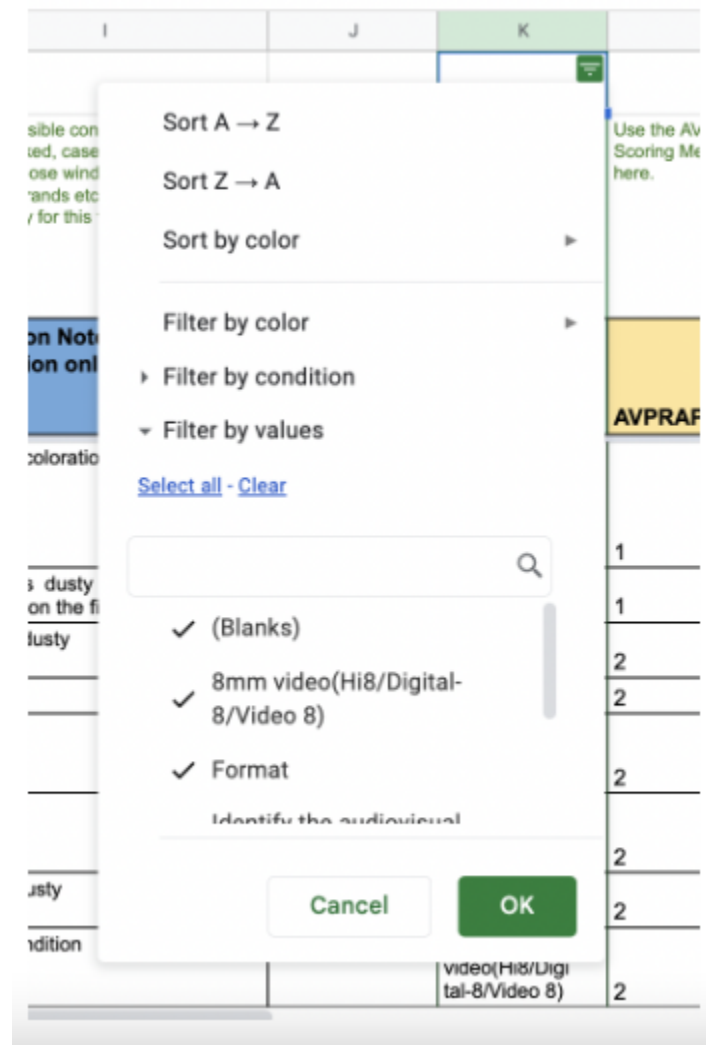


Above: Using the "find" option by pressing "command f"

Filtering items

Using the filter function, you can find out how many VHS tapes you have, how many assets have mold, or how many assets have been digitized. There are endless data sets that you can create using the filter function

- Click on a column and highlight it
- Click on the filter icon (it looks like a funnel)
- Click on the filter icon that you now see at the top of the column (it looks like a tornado, see below)
- Choose "clear"
- You will see a list of every option available in that column. Check the box next to the item/s that you want to see displayed (for example VHS only). Hit "OK".
- Sheets will show you only the VHS tapes in your collection.
- To remove the filter, click on the filter (funnel) icon again.



The “sum” function is a button on the spreadsheet that will add up the numbers in any cells that you highlight. This is a very important tool for counting collection items and running times.

- Highlight the column that you wish to add
- Click on the “sum” symbol in the upper right hand corner of the spreadsheet (the Greek letter, sigma)
- The sum will appear in the box below the last highlighted cell
- Alternatively, you can highlight the numbers you wish to add, and look in the lower right hand corner of the spreadsheet (see in the screenshot below). You will see the word “count” followed by a number. Your sum will also be there.

uses 800

	F	G	H
label or re- con- fig	Capture run time, if known. If you do not know, capture tape length (written on the box or tape). Be consistent with format, numerics.	Capture clearly indicated title on label or asset, or if specified by collection stewards.	Capture information regarding audio or video info map on labels, on glass slides; elements - visible at a glance on labels. If time code is t, consistent. For example: (minutes: seconds)00:03
	Duration of Content in minutes	Title on Item	Content
	120	Laird Conference	Laird Symposium; Han [Leerb] story; Bean Brk [Caetro] astronomy; L: [looked]
	120	24 Shamanism/sacred places, Joe Campbell 354 copy. The first story/sellers/sacrifice and bliss	
	120	Bean Lectures Discussion	[sledgebele]
	120	L.Bean Class 1-28-82, Tape 2 of 2	Lowell Bean Class, 1-2 Malcolm Margolin, Spe
	20	Kathy 12/88	
	120	Andreas Ranch 2	
	120	Andreas Ranch 1	
	120	Lowell Bean 8/15/2005 #2	at labhba.digibo

SUM

AVERAGE

COUNT

MAX

MIN

All ▶

Array ▶

Database ▶

Date ▶

Engineering ▶

Filter ▶

Financial ▶

Google ▶

Info ▶

Logical ▶

Lookup ▶

Math ▶

Operator ▶

fixedMediaTable extra Objec Count: 41 + Explore

Appendix D: Guide to Equipment Needed for Audiovisual Digitization

This document is adapted from the guides [Minimum Viable Station: Documentation](#) (December 2, 2016) and [Minimum Viable Station: Recipes](#) (January 16, 2017) created by Ashley Blewer.

This is an overview of the general components needed to digitize and/or transfer analog and digital video and audio materials with suggestions for currently available equipment. Reviewing examples of documented set ups by other organizations will help illustrate the similarities and differences of digitization setups – below is a list of several resources that contain setup examples.

Before you begin...

If in the course of planning for digitization you determine to invest in an in-house setup as part of your project plan, it is important to determine early on what is required to do the work and who will be doing this work. Questions to ask include:

- What format or formats are you digitizing?
- What equipment do you already have?
- What equipment will you need to acquire?
- What is your budget?
- Where will the equipment be set up?
- Where will the resulting files be stored temporarily and long term?
- Who is responsible for planning, assembling, use, documentation, and maintenance?
- What kind of departmental and/or interdepartmental support is possible?
- Would a partnership with another organization support this work – to share equipment, to support long term digital storage, to apply for additional funding?

Make final decisions based on desired outcomes and resource availability.

We've also created an [equipment inventory template](#) for you to download and customize for your own use.

Recommended Guides

Memory Lab Network

- **A Deep Dive into Building a Memory Lab (in progress)** <https://tinyurl.com/yk34rxje>

- **In the Lab** <https://libguides.dclibrary.org/memorylab/in-the-lab>
- **Equipment and Wiring Diagrams** <https://libguides.dclibrary.org/memorylab/equipment>

Minimum Viable Station

- **Documentation** <https://tinyurl.com/ybh6a9t3>
- **Recipes** <https://tinyurl.com/5n7r5k67>

Indigitization

- **Planning: Before starting an audio cassette digitization project** <https://tinyurl.com/27bkc6rw>

The Cable Bible: A Guide to Cables and Connectors Used for Audiovisual Tech
<https://amiaopensource.github.io/cable-bible/>

Basic Components for Video, Audio & Film Digitization

In each instance, regardless of your budget, ensure you are purchasing items (both hardware and software) that are compatible with each other. You can confirm this by looking at available connections on old and new hardware, and checking software compatibility listings on the product site or within user forums. In almost all instances, high level film scanning aside, you are making commercial products created for purposes other than archiving to conform to archival practices. They often do not cooperate.

Analog Videotape

Example: 3/4 inch U-matic, Betacam, VHS, Hi8

- Computer (with monitor, keyboard, mouse)
- **Analog-to-Digital Converter/Capture card/Video card**
- Capture Software (must be compatible with converter)
- Time Base Corrector (TBC)
- **Video Playback Deck**
- Audio Mixer/Monitor (optional)
- Video Monitor (optional)
- Vectorscope + Waveform Monitor (optional)
- Headphones (plug into deck, mixer, or computer directly to monitor audio quality)
- External Speakers (optional)
- External Digital Storage (temporary storage for capture)
- Cables:
 - Power cords for all relevant hardware
 - HDMI or other cable to connect computer monitor to computer
 - USB-C or Thunderbolt cable to connect converter to computer

- Cable to connect playback deck to video monitor (optional)
- Audio cables connecting audio deck to mixer, mixer to converter (optional)
- Video cables connecting video deck to TBC, TBC to converter

ANALOG VIDEOTAPE COMPONENT PRODUCT RECOMMENDATIONS (2023)

Component	Brand/model	Cost (as of 2023)	Link to example
Computer - desktop	Apple Mac mini (M2) 16GB RAM	\$799	Don't purchase later than 2019 (keep within the 5 year range!). https://www.bhphotovideo.com/c/product/1746630-REG/apple_macmini2_05_mac_mini_m2_8c_10c.html
Computer - laptop	Apple 14" MacBook Pro (M2) 16GB RAM	\$1999	https://www.bhphotovideo.com/c/product/1746351-REG/apple_mphe3ll_a_14_macbook_pro_with.html
Analog-to-Digital Converter	Blackmagic Design UltraStudio HD Mini	\$545	https://www.bhphotovideo.com/c/product/1335021-REG/blackmagic_design_bdlkulsdminhd_ultrastudio_hd_mini_with.html
Capture software	Blackmagic capture card has free access to Media Express - now Desktop Video	\$0	Blackmagic capture card supports - Final Cut Pro X, Premiere Pro CC, DaVinci Resolve, Avid https://www.blackmagicdesign.com/developer/product/capture-and-playback
Capture software	vRecord	\$0	Open source software, can only be used with Blackmagic capture cards (for now). Install requires Command Line use bravery. https://github.com/amiapopensource/vrecord/blob/main/Resources/Documentation/installation_and_setup.md
Time Base Corrector	Leitch DPS-575 TBC	\$800-\$2000	Ideal, but large, used, and expensive! Scour Ebay. http://digiommel.fi/DPS-575.pdf
Time Base Corrector	Burst Electronics PXFS Pixie-FS Frame Store TBC	\$750	https://www.markertek.com/product/burst-pxfs/burst-pixie-fs-frame-store-tbc-time-base-corrector
Audio monitor/mixer	Mackie 402VLZ4 4-Channel Ultra Compact Mixer	\$130	https://www.bhphotovideo.com/c/product/996857-REG/mackie_402_vlz4_402vlz4_4_channel_ultra_compact_mixer.html
Video Deck - U-matic	Sony VO-9800	\$400-\$1500	Large, used, scour Ebay. https://www.manualslib.com/manual/693005/Sony-Vo-9800.html#product-VO-9800
Video Deck - Betacam/Digital Betacam	Sony DVW-A500	\$400-\$1500	Large, used, scour Ebay. https://pro.sony/s3/cms-static-content/operation-manual/3800541041.pdf
Video Deck - Hi8/8mm/Digital 8	SONY GV-D200	\$300-\$800	Used, scour Ebay. Compact Digital 8 Sony deck is more generous with old tapes. https://www.sony.com/electronics/support/res/manuals/W000/W0004510M.pdf
Video Deck - VHS/S-VHS	Sony SVO series for professional, S-VHS decks for consumer	\$300-\$800	More commercial models may have built in TBC. S-VHS decks are highly recommended. Commercial decks can still be bought new, but as usual, scour Ebay.

Analog Audiotape

Example: 1/4 inch audio tape, Compact audio cassette

- Computer (with monitor, keyboard, mouse)
- **Analog-to-Digital Converter**
- Capture Software
- **Audio Playback Deck**
- Audio Mixer/Monitor (optional)
- Headphones (plug into deck, mixer, or computer directly to monitor audio quality)

- External Speakers (optional)
- External Digital Storage (temporary storage for capture)
- Cables:
 - Power cords for all relevant hardware
 - HDMI or other cable to connect computer monitor to computer
 - USB-C or Thunderbolt cable to connect converter to computer
 - Audio cables connecting audio deck to mixer, mixer to converter

ANALOG AUDIOTAPE COMPONENT PRODUCT RECOMMENDATIONS (2023)

Component	Brand/model	Cost (as of 2023)	Link to example
Computer	Apple 13.6" MacBook Air (M2) 8GB RAM is fine	\$999	Any computer that will connect to the converter will work - as long as the converter connects and the capture software is compatible! Refurbished computers are great too! Keep it within 5 years to mitigate compatibility issues with software! https://www.bhphotovideo.com/c/product/1710305-REG/apple_mly33ll_a_13_6_macbook_air_m2.html
Analog-to-Digital Converter	Focusrite Scarlett 2i2 USB-C Audio Interface	\$149	https://www.bhphotovideo.com/c/product/1479275-OREG/focusrite_scarlett_2i2_3g_scarlett_2i2_usb_audio.html
Audio monitor/mixer	Mackie 402VLZ4 4-Channel Ultra Compact Mixer	\$130	https://www.bhphotovideo.com/c/product/996857-REG/mackie_402_vlz4_402vlz4_4_channel_ultra_compact_mixer.html
Audio Deck - compact cassette	TASCAM 202MKVII Rackmount USB Dual Cassette Deck	\$599	Compact cassettes are back in style, you will find newly manufactured and refurbished decks for a range of prices! https://www.bhphotovideo.com/c/product/1413241-REG/tascam_202mkvii_professional_rack_mount_dual_cassette.html?gclid=CjwKCAjwm4ukBhAuEiwA0zQxk0UYqnMjINsRdxxMxEbfs7Nr6fn-dgLwQJATZBksDDehmFyAe3k3OxoC4uYQAvD_BwE
Audio Deck - 1/4 inch open reel	TEAC X-7R 1/4" 2-Track Reel to Reel Tape	\$300-\$800	Used, scour Ebay. https://reel-reel.com/tape-recorder/teac-x-7x-7r/ https://www.synthxl.com/wp-content/uploads/2021/09/Teac-X-7R-x-10r-Owner-Manual.pdf

Digital Videotape

Example: DVCAM, MiniDV/HDV

These magnetic tapes already have digital signals and the goal is not to convert what is on the tape but to move it over into file form as is. That is why you do not need a converter between the deck and the computer capture software.

- **Computer (with monitor, keyboard, mouse)**
- Capture Software
- **Video Deck/Camera**
 - Headphones (plug into deck, mixer, or computer directly to monitor audio quality)
 - External Speakers (optional)

- External Digital Storage (temporary storage for capture)
- Cables:
 - Power cords for all relevant hardware
 - HDMI or other cable to connect computer monitor to computer
 - Firewire cable to connect deck or camera to computer
 - You will likely need adapters (ex: firewire to thunderbolt 2, thunderbolt 2 to 3) to connect the deck directly to a computer

DIGITAL VIDEOTAPE COMPONENT PRODUCT RECOMMENDATIONS (2023)

Component	Brand/model	Cost (as of 2023)	Link to example
Computer		See options above	For DV - the goal is to link the deck directly to the computer, no conversion necessary, but you will still need capture software!
Capture software	Apple Final Cut Pro	\$300	https://apps.apple.com/us/app/final-cut-pro/id424389933?mt=12 Final cut will work with most video cards for other formats as well https://support.apple.com/guide/final-cut-pro/import-from-tape-based-cameras-verd0e78a7e/mac
Capture software	Adobe Premiere Pro	\$20.99/month	https://www.adobe.com/creativecloud/plans.html?filter=pr-reco&plan=individual Premiere will work with most video cards for other formats as well https://helpx.adobe.com/premiere-pro/using/capturing-digitizing.html
Capture software	iMovie	\$0 (for Mac users)	https://support.apple.com/guide/imovie/import-from-tape-based-cameras-mov6af9c94c1/mac
Capture software	LifeFlix DV Importer	\$100	https://www.lifeflix.com/products/lifeflix
Capture software	DVRescue	\$0	Archivist-made software https://mipops.github.io/dvrescue/ https://github.com/mipops/dvrescue
Video Deck - DV	Sony HVR-M25U	\$300-\$2000	Used, now expensive, but covers a lot of format ground. Scour Ebay. https://www.manualslib.com/products/Sony-Hvr-M25u-Professional-Video-Cassete-Recorder-Player-373876.html
Video Deck - DV	Sony DSR-1500A	\$300-\$600	Used, scour Ebay. https://www.manualslib.com/manual/160381/Sony-Dsr-1500a.html

Optical Disc (Digital Video/Audio)

Example: DVD, DVD-R, CD, CD-R

- **Computer (with monitor, keyboard, mouse)**
- Disk Imaging Software (archival) or Ripper Software (content only)
- External Optical Drive or DVD/CD Deck
- External Digital Storage (temporary storage for capture)
- Cables:
 - Power cords for all relevant hardware
 - HDMI or other cable to connect computer monitor to computer
 - Portable Disc Drive to connect directly to computer (USB or USB-C)
 - Connect DVD/CD deck to computer – may require adapters

OPTICAL DISC (DIGITAL AUDIO/VIDEO) COMPONENT PRODUCT RECOMMENDATIONS (2023)

Component	Brand/model	Cost (as of 2023)	Link to example or notes
Computer	Anything that you can attach an external drive to and your capture software will work.		Doesn't require as much processing power, and there are more cross platform software options.
External optical drive	No specific brand, check you can connect to the computer you are using.	\$25-\$75	Recommended over a deck - convenient and multifunctional.
Capture/RIP software	Handbrake, VLC Media Player, Apple iTunes, etc.	\$0	DVD: https://handbrake.fr/ https://www.videolan.org/vlc/ CD: https://tinyurl.com/4763mebb
Disk Imaging Software - Windows	FTK Imager	\$0	https://accessdata-ftk-imager.software.informer.com/3.1/
Disk Imaging Software - Mac	Guymager	\$0	https://guymager.sourceforge.io/

Motion Picture Film

Example: 16mm, Regular 8mm, Super 8mm

Motion picture film digitization equipment is prohibitively expensive for most small institutions, and even for well-funded institutions it is worth considering if the amount of film to be digitized warrants purchasing equipment over working with a trusted vendor. In addition to the film scanners themselves, if digitizing a large amount of film on-site an organization would be advised to have an operator with some film handling experience.

- **Computer (with monitor, keyboard, mouse)**
 - **Exact type is dependent on specific scanner purchased, but expect to need a dedicated machine with high RAM and storage**
 - **While the Wolverine does not need a computer to perform capture, you will need to transfer your video files from the SD cards required for the machine to external storage locations via a computer**
- **Film scanner**
- **External Digital Storage (temporary storage for capture)**

MOTION PICTURE FILM DIGITIZATION COMPONENT PRODUCT RECOMMENDATIONS (2023)

Component	Brand/model	Cost (as of 2023)	Link to example or notes
Computer	Dependent on scanner	\$999-\$3000	https://moviestuff.tv/4k_system_specs.pdf
Film scanner	Wolverine 8mm and Super 8*	\$299	https://www.wolverinedata.com/products/new-wolverine-8mm-and-super-8
Film scanner	Wolverine Moviemaker Pro*	\$399	https://www.wolverinedata.com/products/MovieMaker_Pro
Film scanner	RetroScan 816-2K Desktop Movie Scanner	\$6695	https://www.moviestuff.tv/retroscan_816_2k_scanner.html
Film scanner	RetroScan Universal 4K Mark-II Movie Scanner System	\$14,195	https://www.moviestuff.tv/moviestuff_universal_mark_ii_series.html
Film scanner	FilmFabriek HDS+	~\$50,000 [check with company directly for a quote]	https://filmfabriek.nl/hds-plus/
Film scanner	Lasergraphics	~\$60,000-\$200,000 [check with company directly for a quote]	https://lasergraphics.com/

*While the Wolverine machines are included on this equipment list, the quality of files produced by these machines is not suitable for preservation needs. In fact, in many cases the quality of the files is not even suitable for access needs, especially if your film is not in pristine condition.

Additional Digitization & Equipment Resources

- Digitization Best Practices and Recommendations, National Heritage Digitization Strategy (NHDS), 2019
<https://cnhds.files.wordpress.com/2019/05/nhds-digitization-best-practices-and-recommendations-2019.pdf>
- Indigitization: Project Planning
<https://tinyurl.com/yk2ftzu5>
- Indigitization: Digitization Best Practices and Guides
<https://tinyurl.com/cxuh9yvw>
- MemLabNet: Intro to Digitization, Digital Preservation, and Scanning
<https://youtu.be/GSZSZ4b2NWE>
- Community Archiving Workshop: Video and Audio Digitization Kits Documentation
<https://communityarchiving.org/category/resources-hb/kits/>
- NSW Australian Mukurtu Hub: Digital Stewardship Curriculum
<https://tinyurl.com/mps6k2td>
- NSW Australian Mukurtu Hub: Digitization Purpose Statement Worksheet
<https://tinyurl.com/52e5u2c8>
- NSW Australian Mukurtu Hub: Digitization Selection Criteria Worksheet
<https://tinyurl.com/5n6ty726>
- The Cable Bible: A Guide to Cables and Connectors Used for Audiovisual Tech
<https://amiaopensource.github.io/cable-bible/>
- An Optical Media Preservation Strategy for New York University's Fales Library & Special Collections, 2018
<https://tinyurl.com/k2wdr5kj>
- Equipment Purchase – used and new – in North America (some products sold directly by brand,

check their sites)

- B&H Photo <https://www.bhphotovideo.com/>
- Adorama <https://www.adorama.com/>
- Ebay <https://www.ebay.com/>
- Backmarket <https://www.backmarket.com/en-us>
- Newegg <https://www.newegg.com>

Appendix E: Choosing an Online Platform for Audiovisual Materials

Many thanks to Ashley Blewer for creating and maintaining the [Collection Management System Collection](#) which helped inform this resource.

Digital audiovisual files often require their own set of considerations when choosing how to share them with users. For example, audio and video files can have several different related parts and their file size can take up much more room than manuscript or photo files.

Digital file storage focuses on the preservation and management of original, high-quality, digital files. Digital access, by contrast, focuses on providing users with a user-friendly means to access and interact with those files. For instance, watching a video on YouTube is an access point. But YouTube isn't (or shouldn't be) where the large preservation-quality video file is stored; the preservation-quality video file should be stored and backed up internally in your organization. This resource guide focuses on online access, not content management systems or internal storage options (though some content management systems provide both preservation and access options).

Note: Technology in a state of constant change may mean these recommendations have changed or become obsolete. Some good places to check for any updates are AMIA and SAA conferences, professional communities of practice, or the Collection Management System Collection spreadsheet linked above.

When choosing a software or streaming option to provide access to your digital audiovisual files, some questions to ask internally or of vendors include:

- **What is the cost?**
Some software might be open source, which means there isn't an up-front cost to the software, but this can mean that there isn't a lot of support available. Other software can be very expensive up-front.
- **Does the software integrate with other software or content management systems?**
For instance, one popular A/V access platform, Aviary, can't be harvested, which means that aggregators like the Digital Public Library of America can't access those collections. Are there other integrations necessary for your organization?
- **How does the software provide access to users?**
Can you provide differing levels of access to specific sets of users? For instance, can you set permissions for some people, password-protect sensitive content, etc?
- **How does the software handle sensitive content?**
Is there an option to blur images, add a harmful content statement, or restrict access to content?
- **How does the software or platform handle copyright?**

For instance, YouTube might restrict or remove videos with copyright content. See [this resource](#) for more information on copyright for A/V materials.

- **Does the software have the option to generate or include transcripts?**
The Oral History Metadata Synchronizer (OHMS) can synchronize transcripts and index points with audio recordings, but the transcripts need to be created elsewhere (by a transcriptionist or software for that purpose). YouTube has an automatic caption generator that can serve as a rough transcript, though it may require some editing.
- **Do you need audiovisual capabilities or just audio?**
- **Does the storage provide access and storage/hosting, or just access? Which do you need for your project?**

Below are a few commonly used access solutions and examples of their use. This is by no means a complete list and should not be construed as an endorsement of any service over another.

Tools

- [Oral History Metadata Synchronizer \(OHMS\)](#) – Example: [Listening to War collection](#)

Options for all media – storage and access

These options can provide storage for media files, though storage is nearly always the most expensive portion of sharing digitized audiovisual files.

- [CONTENTdm](#) – CONTENTdm is an expensive solution for storage but is a good access point for linked files. [Example](#)
- [Internet Archive](#) – Free with customizable options. [Example](#)
- [Kaltura](#)
- [Mukurtu](#) – An open source platform with robust permissions controls; designed by and for Indigenous communities. [Example](#)
- [Omeka](#) – Inexpensive and easy to use but does not have a lot of customizable options. [Example](#)
- [Preservica](#) – could be expensive for data storage
- [Aviary](#) – can't be harvested by aggregators. [Example](#)

Video options – access only

In some cases, it is advisable to host content at a free or inexpensive streaming site such as YouTube, Vimeo, or Internet Archive. Those hosted files can then be linked into your content management system.

- [YouTube](#) – Free
- [Vimeo](#) – Relatively inexpensive with robust privacy controls.

- [Internet Archive](#) – Free with customizable options. [Example](#)

Appendix F: Working with an A/V Digitization Vendor

Introduction

This document offers guidelines for working with an audiovisual preservation vendor. Before sending your analog audiovisual assets off to a vendor for digitization, it is important to determine two things:

1. **Do I need to use a vendor?**
Is it more cost and time effective?
Is it in keeping with my organization's mission statement (vs. digitizing our collection in-house through community efforts)?
2. **If I am using a vendor, how do I choose a vendor and how do I communicate what I need from them?**

This document helps you to answer these questions. It also walks you through the necessary steps to working successfully with a vendor, should you choose to use one.

How to Determine If You Need to Use a Vendor for Audiovisual Digitization

Review the Advantages and Disadvantages of In-House Digitization Versus Out of House Digitization

After you have prioritized an analog audiovisual collection for digitization, you must determine if the digitization will be done by an external vendor, if you will digitize the collection yourself, or if you will use a community-based or collaborative effort to digitize the collection. Each option has its advantages and disadvantages, and you may wish to perform a combination of methods.

Vendors and specialists are vital to digitization efforts, but it is important to note that sending everything to a vendor is not always cheaper, faster, or less of a burden on your time. Below are some thoughts to review as you make your decision.

Advantages of using a vendor to perform digitization may include:

- The vendor provides a specialty service such as:
 - Photochemical film reproduction (making a new film element on film)
 - Film restoration/ replasticizing for deteriorated film
 - Tape baking or working with tapes that have “sticky shed syndrome”
 - Physical repair or inspection of film and magnetic media
 - Working with dangerous materials that offgas, are flammable, or are moldy

- The vendor has expertise, equipment, or facilities that the client does not have.
- Working with a vendor may be cheaper than investing in staff skill-building and equipment for small collections.

Disadvantages of using a vendor may include:

- Hidden time and cost to:
 - Manage and oversee the digitization project
 - Pull, ship, and re-shelve materials
 - Perform quality control of digitized files
 - Communicate any problems with the vendor and have the vendor re-do work
- Using a vendor can be more expensive than performing digitization in-house, especially for large collections.
- Rare and unique items may be in uncontrolled storage and shipping environments that may expose them to potential damage.

Advantages of in-house and community digitization include:

- It may be more cost effective for your organization to digitize in-house.
- Staff gains new skills in digitization.
- Resources (such as equipment and expertise) can be shared among organizations.
- Organization maintains physical control over collection:
 - Collection assets do not leave your organization
 - More control over the quality of the digitization
 - More control of how the collection is handled
- Organization maintains intellectual control over collection:
 - Staff builds strong knowledge of the content of the collection as it is being viewed and digitized
 - Collection description, inventory, and finding aids are developed by community members who best understand the collection

Disadvantages of in-house and community digitization include:

- It may be more expensive to digitize small collections in-house.
- Some assets may require special treatment and intervention.
- Investment in equipment, technology, and staff training are required.

Perform a Cost Analysis

In order to determine whether or not to use a vendor, you will want to perform a simple cost analysis to find out which will cost less, and what the advantages and disadvantages will be for both in-house and out-of-house digitization. A cost analysis is an estimate. The actual cost of the project can change depending on many factors, such

as actual tape duration, the level of decay of the analog assets, and other unknowns. Still, the cost analysis is vital in determining what path is best for your collection.

The following steps are a guide to preparing a cost estimate.

Get and Use Collection Data

In order to perform a cost analysis, you will need at least an estimate of the following data points:

- The number of assets you have
- The formats of the assets
- The footage (for film) and the duration (for magnetic media)¹
- The general condition of the collection/ if any items have outstanding issues such as mold

If you do not have collection data, you can perform a [collection inventory](#).

Get Estimates from Vendors

Once you have your essential collection data, you can contact several vendors to receive a digitization estimate. Provide the vendor with as much detail as you can; specify the format and duration of each asset and include any condition notes you can provide.

It is important that items have unique identifiers on the physical object and in your collection inventory. This helps you track specific assets and can later be used in the digital file name to refer back to the analog asset. You can print your own unique identifier labels using small return address labels or you can order them from a sticker vendor.

Vendors usually charge by the foot (for film) or by the number of hours of content (for magnetic media). When recording length is unknown they generally charge for the maximum duration of the carrier.

Vendors will need to know what deliverables you expect, such as access files, metadata, and checksums, as well as what your target digitization file formats will be. You can consult with a vendor and with archivists to determine a target file that meets archival standards for quality and also meets your budget and storage needs.

Once you have several estimates from vendors, you can choose the vendor that best meets your needs and compare their quote to your estimate of the cost to perform digitization in-house.

Estimate the cost to perform digitization in-house

You can use your collection data to determine the cost to digitize your collection in-house. To create a simple estimate, use the following calculation:

- Number of hours of footage multiplied by 3 (for each hour of content, assume you will need 2 hours for project management and quality control)
- Hourly wage of staff to perform digitization
- The cost of [digitization equipment](#):

¹. The term "duration" refers here to the number of minutes of content. Duration of magnetic media collections can be difficult to determine; even if a tape is 60 minutes long, there may be only five minutes of recorded content. In order to estimate duration, you can use any documentation that comes with the asset noting its length. If you have no data or annotations about the duration of the tape, use the full tape length. For example, if the tape says "90 minutes" on the manufacturer's label, use 90 minutes as your estimated duration.

- Analog decks (for magnetic media)
- Film scanner (for film)
- Computers for ingest and/or file processing
- Analog to digital converter
- Time base corrector (TBC)
- Scopes
- The cost of supplies
- The cost to clean, repair, and maintain equipment

Performing digitization in-house means having or being willing and able to invest in the acquisition of necessary resources (equipment, software) and support staff training or the hiring of new staff. One of the biggest challenges to digitizing collections in-house is finding and maintaining legacy equipment. New film scanners can be purchased, but no new equipment or parts are made to play back magnetic media. Your organization may have playback equipment or may need to purchase it- either way equipment needs to be tested and regularly maintained. This means you will also need a technician on hand in case you run into any technical issues. You will also need to find legacy equipment in good condition.

When considering in-house digitization, factor in that there is a significant learning curve to operating and maintaining legacy equipment. If you are willing to undertake these challenges, in-house digitization has many benefits.

Compare your estimates

Once you have vendor estimates and your own, in-house estimates, compare the two. Cost is not the only factor when determining how to digitize.

Review your organization's mission and goals and determine if your approach to digitization is in line with these. Performing digitization in-house can build staff skills, build knowledge about the collection content, and keep collections within your organization. Community-based digitization efforts can share resources, build a local network, and inspire your community.

Using a vendor can create valuable connections and provide expertise for complex projects like photochemical preservation or digitization of heavily deteriorated items that you may not be able to work with in-house.

Review the following financial factors:

- Which estimate is a lower cost per hour of A/V material?
- A vendor estimate will only cover the cost of the vendor to perform the digitization. Be sure to factor in the cost to your organization to perform project administration and quality control. Add one to two hours per hour of content to the vendor estimate to see the true cost of the project.

Review the following non-financial factors:

- Is it within your organization's mission statement to build staff skills and grow the organization through initializing in-house digitization? Does digitizing in-house further that mission?
- Is the cost difference significant enough to risk the assets being in the hands of a vendor, even one with a good reputation?

- Does the administration of my organization understand the staff time necessary to oversee a vendor-based project?
- Can you work collaboratively with other organizations to share resources?

If you determine that you will work with a vendor for your digitization project, the following sections will help you move forward.

Choosing A Vendor

If you decide to use a vendor, consider three factors: quality, speed, and affordability. How important is each factor to you?

Vendors: Low Level, Mid Level, and High Level Preservation

Low level vendors like Costco can provide quick and fast reference copies, but the real value of digitization is compromised because these vendors do not digitize at a high quality level. Cheap and fast digitization can mean that you lose a great deal of information that is vital to the value of the collection. For example, low quality digitized files may not capture written signs, newspaper headlines, facial expressions, and other information. Low quality digitized files produce footage that is unsuitable for many creative works or research. Additionally, low level vendors perform mass digitization that puts assets at risk- unmonitored digitization can result in permanent damage to audiovisual assets.

Mid level vendors may provide a good transfer at a lower cost that can be used in later works. If inspection and inventory determines that assets in your collection are in decent condition, and do not require close monitoring, mid level vendors can be an affordable option.

High level digitization may provide the best quality at a high cost. These vendors can be used for your most unique and valuable material, but may not be right if you are digitizing collections that were not originally shot at high resolution or intended for aesthetic use. High level digitization vendors are especially suited for working with extremely endangered formats, damaged audiovisual assets, or complex media such as multi-channel video or for photochemical preservation.

Vendor Experience and Your Experience

You should feel comfortable communicating with a vendor and with the information and feedback you receive. Is the vendor quick to respond? Does their response answer your questions and provide you with necessary information? How does that information compare with your own research? Does the vendor ask you questions or provide guidance that helps you understand your choices better? Have your colleagues had a good experience with a vendor? You should feel free to see examples of the vendor's work or to ask for a sample (even if you pay for the sample) of how their work compares with the work of other vendors.

Working with a Vendor

Determine Your Deliverables

You have decided to use a vendor to perform digitization of a few complex assets, or you have decided to send your project out-of-house for all digitization. What can you expect from a vendor?

Examples of what vendors do:

- Film Inspection and cleaning
- Special Services (film repair, mold remediation, magnetic media repair)
- Digitization
- Production of derivative files (access files)
- Quality control of files
- Production of metadata
- Production of checksums

Be sure to determine exactly what you expect of a vendor, and exactly what steps will be taken if the vendor does not deliver those expectations.

Write a Contract and Work order

See the “[CAW sample work order](#)” for a template that can help you get started. The work order should outline how long the project will take, how much it will cost, and how the vendor will communicate any changes as they arise. Additionally, your contract should detail packing and delivery methods for your collection to be transported.

Determine how your files will be delivered

Once digitization is completed by the vendor, request your digital files for review. Smaller files may be delivered via the cloud or an online transfer service. If you have large files and / or a slower internet connection, your vendor can send the files to you on a hard drive. While hard drives should not be your only file storage method, they can be convenient for delivery of files, and they can be kept to serve as backup storage.

Performing Quality Control

After files are delivered, your staff will need to perform quality control. This can be as simple as reviewing the beginning, middle, and end of a file. You can also use tools such as [QC Tools](#). Your original audiovisual assets should not be returned until your organization has performed quality control and approved the quality of digitization. If you find errors in digitization you can request that the vendor make a second attempt at digitization.

Summary

Digitization has many advantages in access, skill improvement, and preservation. It opens up your collection for use in research and creative projects. It helps your organization to meet its mission. It provides access that supports your fundraising and advocacy efforts.

But digitization is not the end of the preservation process– it is just the beginning. Digital files need to be stored, maintained, and cared for as analog objects are. See the [Store and Maintain](#) section of this Toolkit for pointers on basic digital file storage advice.

Appendix G: Creating Documentation

Some tips and a checklist

At various points in the Toolkit, we prompt you to document your organization's policies, procedures and decisions. This documentation provides a paper trail for future decision makers and future users to understand past decisions. Good documentation can also help make training for staff, volunteers and interns more efficient and consistent. Write it down now, you'll thank yourself later!

Creating documentation is also an opportunity to engage your stakeholders in goal-setting and future planning. Groups to involve in developing and reviewing documentation might include boards, advisory committees, staff, and volunteers. You might also consider sharing your draft documentation with colleagues at other organizations to gather feedback.

Tips for creating effective documentation:

- Give your documents titles that clearly explain what policy or process is being documented, e.g. Digital Collection Development Policy, or Photo Digitization Workflow.
- Use clear, concise, specific language. Avoid the use of jargon or technical terms, or include a glossary or term definitions.
- Keep documentation together so that instructions and policies are easy to find. Consider compiling a manual or handbook.
- Test your workflows and processes before publishing or putting into use.
- Save multiple copies of your documentation in multiple locations. Control document changes so that they can't be accidentally edited.
- Create a schedule for reviewing your processes and policies.

Checklist of documentation recommended in the Toolkit

- **Digital Mission Statement**
- **Digital Collection Development Policy**
- **Deed of Gift form with digitized/born-digital language**
- **Permission form**
- **Takedown policy**
- **Harmful content statement**
- **Digitization workflow**

- **Quality Control checklist**
- **Digitization log (with QC checks)**
- **File naming convention**
- **Data dictionary**
- **Inventory of digital collections**
- **Schedule for checking digital storage**
- **Digital preservation plan**

Appendix H: Checklist of Key Activities

BRONZE LEVEL

Laying a strong foundation

Plan and Prioritize

- Articulate your organization's goals for digital work.
- Develop a digital mission statement.
- Assess collections and prioritize potential digital projects.
- Assess and document organization's strengths and weaknesses in caring for digital collections.

For A/V materials

- For audiovisual materials, create an item-level inventory of analog and digital collections.
- Identify the most fragile and unique A/V assets in your collections.

Obtain Permissions

- Adopt deed of gift form includes language about online access to digitized and born-digital streaming content, downloading, and re-use or update existing deed of gift form.
- If creating new digital content, such as oral history interviews, use a permission form that includes language about online access, or update existing permission forms.

Digitize

- Identify the resolution, color, bit depth, file format, and other standards you will use to digitize materials.
- Choose equipment for reformatting, identify partnerships, or select an appropriate vendor.

For A/V materials

- Identify the sample rate, bit rate, codec, wrapper, and other standards you will use to digitize materials.

Describe

- Adopt a file naming convention and document it.
- Determine the metadata standard you will use and how the metadata fields apply to your collections.

Share

- Review options for providing access to digital content.
- Choose access options that meet your needs and goals.

Store and Maintain

- Establish an inventory to document existing and incoming born-digital collections.
- Establish an inventory to document existing and incoming reformatted analog collections.
- Develop a plan for storage locations of unmodified primary files and related metadata, both on-site and off-site.
- Develop a plan for checking and refreshing storage media on a regular schedule.

Evaluate

- Define user groups and their information needs.
- Develop outreach ideas, plans or strategies.
- Revisit original project goals and determine if project goals were reached.

SILVER LEVEL

Putting it into practice

Plan and Prioritize

- Create a detailed plan for a high-priority digital project.
 - Determine if your project will be completed in-house, by a vendor, or a combination.
- Determine resources needed to support your project plan.
 - Identify roles and responsibilities, who might fill them and if you will need new staff or volunteers.
- Get input from partners as you develop the plan.

Obtain Permissions

- Gather existing documentation that may inform copyright and permissions: deeds of gift, donor permission forms, or correspondence with donors.

- Identify items not covered by copyright (in the public domain).
- Identify items potentially covered by copyright and make determinations about appropriate access.
- Review items to determine whether privacy, ethical, or cultural considerations will determine appropriate access.

Digitize

- Prepare physical materials for reformatting.
- Complete a pilot project. Digitize a handful of items to check your settings and make sure the standards you identified will give you the results you want.
- Document your workflow. Create a step-by-step outline of your digitization procedures.

Describe

- Create metadata for items.

Share

- Add digital collection items and related metadata to your CMS or other identified access option(s).
- Identify partnership opportunities to make your items more widely discoverable.

Store and Maintain

- Move copies of files to their on-site and off-site storage locations.
- Implement a plan for checking and refreshing storage media on a regular schedule.
- Develop a plan for checking file integrity (fixity).

Evaluate

- Gather information about how your collections are being used, such as research inquiries or reproduction requests.
- Consider using tools such as Google Analytics or Facebook Page Insights to gather data about views and searches.

GOLD LEVEL

Refining and sustaining

Plan and Prioritize

- Gather ideas and examples of digital collection development policies that include both born-digital and digitized analog collections.

- Draft a digital collection development policy and obtain feedback from stakeholders.
- Finalize and adopt the policy.

Obtain Permissions

- Use standardized rights statements or Creative Commons licenses to describe the copyright status of digital items.
- Develop a takedown policy.
- Develop a statement or notice about potentially harmful content.

Digitize

- Develop a list of what to check during a quality control review.
- Determine who is responsible for quality control.
- Use a log to track digitization work and quality control reviews.

Describe

- Identify and/or create controlled vocabulary lists to use when creating metadata.
- Create a data dictionary to document the standards you will use for metadata.

Share

- Provide alternative text descriptions for all visual images made available online.
- Provide searchable full text for all text materials made available online.
- Provide transcripts or captions for all audio and video recordings shared online.

Store and Maintain

- Document your storage decisions. Where is it? Who can access it? How?
- Implement plan for checking file integrity (fixity).
- Document procedures used for any file checking tools and perform checks on a regular schedule.

Evaluate

- Document lessons learned and ideas for how to apply what you've learned to future projects.
- Connect with other practitioners engaged in digital work

Appendix I: Further Reading

PLAN AND PRIORITIZE

- [Preservation and Selection for Digitization](#), Northeast Document Conservation Center

OBTAIN PERMISSIONS

- [Welcome to the Public Domain](#). Stanford Libraries.
- [Orphan Works](#). Center for the Study of the Public Domain, Duke University Law School
- [What is Fair Use?](#) Copyright Alliance.
- [Responsible Access Workflows](#), University of California Berkeley Libraries
- ["RightsStatements.org: Why We Need It, What It Is \(and Isn't\) and What Does It Mean for the DPLA Network and Beyond?"](#) [webinar recordings] Digital Public Library of America, 2016.

DIGITIZE

- Ashenfelder, Mike. ["Personal Digital Archiving: The Basics of Scanning."](#) The Signal, Library of Congress, 2014.
- ["Reformatting — Outsourcing and Vendor Relations."](#) Northeast Document Conservation Center.
- ["Technical Guidelines for Digitizing Cultural Heritage Materials."](#) Federal Agencies Digitization Guidelines Initiative (FADGI), 2016.
- ["Promoting Use of Your Digital Content."](#) Digital Public Library of America, 2015.

DESCRIBE

- Baca, Murtha, ed. [Introduction to Metadata](#). 3rd ed. Getty Publications, 2016.
- [Best Practices for CONTENTdm and other OAI-PMH compliant repositories: Creating shareable metadata](#). OCLC, 2020.
- Best practices for file naming, Data Management Services, Stanford University Libraries.

<https://library.stanford.edu/spc/university-archives/managing-university-records/file-naming-guidelines>

- [CDP Dublin Core Metadata Best Practices Version 2.1](#). Collaborative Digitization Program, 2006.

SHARE

- Shreeves, Sarah L., Jenn Riley, and Kat Hagedorn (eds). [Best Practices for OAI Data Provider Implementations and Shareable Metadata](#). Washington, D.C.: Digital Library Federation, 2007.
- Woody, Rachael Christine. [“How to Select, Buy, and Use a Museum CMS.”](#) Lucidea.

STORE AND MAINTAIN

- [“Storage and Maintenance.”](#) Wisconsin Historical Society, 2018.
- [Digital Preservation Plan worksheet](#), Sustainable Heritage Network
- [“Digital Preservation Peer Assessment.”](#) Northeast Document Conservation Center, 2019.
- [Getting Beyond Digital Hyperbole & Tools for Looking Forward](#). Trevor Owens, 2017.
- [Digital Preservation Handbook](#), 2nd Edition, Digital Preservation Coalition, 2015.
- [Levels of Digital Preservation](#). National Digital Stewardship Alliance, 2019.
- [“Good Migrations: A Checklist for Migrating Your Digital Preservation Infrastructure.”](#) National Digital Stewardship Alliance, 2021.
- [“The Environmental Impact of Digital Preservation.”](#) Digital Bedrock, 2023.
- [“MemLabNet Webinar: Digital Storage Crash Course.”](#) DC Public Library Memory Lab Network, 2018. (All of the DC Public Library Memory Lab Network [videos](#) are available and easily understood.)
- [Know Your Digital Storage Media](#). University of Texas at San Antonio Libraries Special Collections, 2013-2014.

EVALUATE

- [Community Catalyst: How do we know we are having an impact?](#) Institute of Museum and Library Services, 2017.
- [“Evaluation And Community Engagement: Everyone Is An Evaluator.”](#) Building the Field of Community Engagement, 2015.
- [Community Tool Box: Evaluating the Initiative](#). Center for Community Health and Development–University of Kansas, 2022.

COMMUNITY MEMORY RESOURCES AND TOOLS

In Fall 2019, WiLS (Wisconsin Library Services) began a cooperative agreement with the Institute for Museum and Library Services (IMLS) to mentor a group of ten libraries around the country that received Accelerating Promising Practices (APP) grants from IMLS. This funding opportunity was designed to help small, rural, and tribal libraries

build capacity in several areas including community memory. A second cohort of seven libraries kicked off their APP grants in Fall 2020.

Over a three-year period, WiLS facilitated virtual and in-person learning opportunities for project leaders at these seventeen libraries as they took on oral history initiatives and other projects to document and share the unique stories of their communities. [Here you'll find](#) links to many of the slide decks, handouts, worksheets, and other materials created by WiLS and by an array of guest experts to support the cohort as they launched, promoted, and evaluated their community memory projects. These materials were created in response to cohort needs and are shared here with the intention of helping other organizations doing similar work.

WISCONSIN CASE STUDIES

- [Madison Trust for Historic Preservation](#)
- [Lake Mills Aztalan Historical Society](#)
- [Richard I. Bong Veterans Historical Center](#)
- [Door County Library / Door County Historical Museum and Archives](#)
- [Chippewa Valley Museum](#)
- [Sharing Local History Resources: Multiple Organizations](#)
- [Stoughton Public Library](#)
- [Sauk City Public Library](#)
- [Langlade County Historical Society](#)
- [History Museum at the Castle: Audiovisual Collections](#)
- [Milwaukee Public Museum: Audiovisual Collections](#)
- [University of Wisconsin-Eau Claire: Audiovisual Collections](#)

Digital Readiness Glossary

3-2-1 Rule

The 3-2-1 rule informs digital preservation and storage strategies. Maintain three copies of your digital files on two different storage media with at least one copy stored off site.

Access

In archives, access refers to the ability to locate and retrieve archival information for use within applicable restrictions.

Access copy

(Or access file) A copy made from a digital object that is intended for use, such as online display or transmission over email

Accessible

Digital accessibility is the ability of a website, mobile application or electronic document to be easily navigated and understood by a wide range of users, including those users who have visual, auditory, motor or cognitive disabilities.

Administrative metadata

Administrative metadata is information needed to help manage the digital object, such as copyright and preservation information.

Analog

Analog refers to information that exists in nondigital format such as printed or manuscript text, audio tapes or films, photographs or other graphics, or 3-D objects. Digitization is the conversion of analog information into digital information. Analog items in the archive might also be known as physical content.

Appraisal

In an archival context, appraisal is the process of determining whether records and other materials have permanent (archival) value.

Archival copy

An archival copy in digital collections refers to digital content, targeted for preservation, that is considered the archival version of the intellectual content of a digital resource. Archival copies/preservation copies generally do not undergo significant processing or editing, and are often used to make other copies including reproduction and access copies.

Audit

An audit is an independent review and examination of records and activities to test for compliance with established policies or standards, often with recommendations for changes in controls or procedures.

Backup

A backup copy is an additional copy of a digital asset made to protect against loss due to unintended destruction or corruption of the primary set of digital assets.

Best practices

Best practices are procedures and guidelines that are widely accepted because experience and research has demonstrated that they are optimal and efficient means to produce a desired result.

Bit

A bit is the smallest unit of information that a computer can work with. Each bit is either a "1" or a "0".

Bit depth

Bit depth is determined by the number of bits used to define each pixel. The greater the bit depth, the greater the number of tones (grayscale or color) that can be represented. Digital images may be produced in black and white (bitonal), grayscale, or color.

Bit Preservation

Bit-level preservation is the basic level of preservation of a digital resource (literally, preservation of the bits forming a digital resource). Bit-level preservation may include maintaining onsite and offsite backup copies, virus checking, fixity checking, and periodic refreshment to new storage media.

Born-digital

Born-digital content has never had an analog form. Born-digital materials differ from analog documents, movies and photographs that were digitized; that is, scanned or converted to a digital format.

Byte

A byte is a unit of digital information and measure of data volume, normally equivalent to eight bits. Bytes are the smallest operable units of storage in computer technology.

2 Kilobyte (KB) = 1,000 bytes

Megabyte (MB) = 1,000 kilobytes

Gigabyte (GB) = 1,000 megabytes

Terabyte (TB) = 1,000 gigabytes

Calibration

Calibration refers to aligning a scanner's color profile with its attached computer's color profile; a process that uses a color target. Calibration ensures true capture of the original colors in a digital format.

Checksum

A checksum is a unique numerical signature derived from a file. checksums are used in fixity checking in order to compare copies.

Cloud storage

Cloud storage is a way to save data securely online so that it can be accessed anytime from any location and easily shared with those who are granted permission. Cloud storage also offers a way to back up data to facilitate recovery off-site. Cloud storage services include Google Drive, Dropbox, Box, etc.

Collection

A general term to describe a body of records, and may include documents, photographs, audio/visual material, maps, etc., in both physical and electronic forms.

Collection development policy

Guidelines outlining the scope and selection of materials that support a repository's mission. Generally, a collecting policy defines the scope of existing collections and also describes processes such as deselection, retention, preservation, and storage. It provides guidance for archives staff, organizations and individuals interested in donating, and other collecting repositories.

Collection Inventory

A collection inventory includes, at a minimum, a list of items in a collection or a list of collections maintained by an organization.

Collections Management System (CMS)

A Collections Management System (CMS), sometimes called a Collections Information System, is software used by the collections staff of a collecting institution or by individual private collectors and collecting hobbyists or enthusiasts. Collections Management Systems (CMSs) allow individuals or collecting institutions to organize, control, and manage their collections' objects by "tracking all information related to and about" those objects. May also be referred to as a Discovery Platform. See: CONTENTdm, Mukurtu, Omeka, PastPerfect, Preservica

Color target

A color target is a type of measuring table that calculates the exact color recognition capability of a scanner and identifies the singularities of that scanner. The color target is a small card with a range of colors printed on it that the scanner can scan during the calibration process.

Color/bi-tonal/grayscale

A bitonal (bi-tonal, or two bits) image is black and white. A grayscale image represented by multiple bits of information, typically ranging from 2 to 8 bits or more. A color image is typically represented by a bit depth ranging from 8 to 24 or higher.

Community of Practice

A community of practice is a way to learn by working together. As described by Etienne Wenger, Richard McDermott and William M. Snyder in their 2002 book *Cultivating Communities of Practice*, a Community of Practice (COP) is "a group of people who share a common concern, set of problems, or passion about a topic and deepen their knowledge and expertise in this area by interacting on an ongoing basis."

Compression (compressed/uncompressed)

Compression is a process that reduces the amount of space necessary for data to be stored or transmitted. Compression alters digital image quality.

Conservation

Focuses on understanding the material, fabrication/construction, strengths/weaknesses, history, and significance of collection items to advance their preservation, through documented examination, research, treatment, and preventive conservation measures. Activities include re-housing, proper shelf storage, vinegar testing, rewinding of film, etc.

Content

Content refers to the intellectual substance of a document, including text, data, symbols, numerals, images, and sound. For A/V material, the content is the data encoded in a recording. For a book or other publication, it is the text and accompanying illustrations. For a photograph, it is the image itself, not the medium the image

is held on (e.g., paper, glass or plastic.) For a digital photograph, it is the image and embedded metadata. For multimedia, it is the digital files and embedded metadata, not the hard drive or disc it is stored on.

Content Migration

Content migration is the process of transferring content between storage types, formats, or computer systems.

Content refreshing

The act of copying digital content to a new physical carrier, typically of the same media type. This is done to prevent the loss of content due to media degradation.

Content statement

A content statement might be known as a harmful content statement. It is a brief introduction to materials that may be traumatic, triggering, hurtful or harmful to an unaware patron.

Controlled vocabulary

A controlled vocabulary is a standardized, pre-determined list of terms, such as the Library of Congress Subject Headings.

Conversion

Conversion usually refers to some form of analog-to-digital conversion, such as digitizing VHS tapes or film reels, including scanning paper documents to create digital images or rekeying paper text into a computer. Conversion is more than copying files. It involves a change in media internal structure, such as from diskette to tape, from one version of an application to a later version, or from one application to another.

Copyright

Copyright refers to the legal rights protecting the interests of creators or their assignees by granting them control over the reproduction, publication, adaptation, exhibition, or performance of their works in fixed media.

Creative Commons license

A Creative Commons license is a type of license, built on copyright, that provides a standardized way for creators to give others the right to share and use their work.

Crowd-sourced projects

Crowdsourcing uses a large number of people to complete a specific task. Crowdsourcing in archives and special collections can take the form of transcribing handwritten documents, indexing genealogical records, identifying people and places in photos, correcting optical character recognition (OCR) errors in digitized newspaper collections, tagging or captioning historical images, adding pictorial content to maps, transcribing oral histories, and much more.

Cultural Heritage (organization, collection)

Cultural heritage refers to the legacy of physical artifacts and intangible attributes of a group or society that is inherited from past generations. Not all legacies of past generations are "heritage", rather heritage is a product of selection by society. Cultural heritage includes tangible culture (such as buildings, monuments, landscapes, books, works of art, and artifacts), intangible culture (such as folklore, traditions, language, and knowledge), and natural heritage (including culturally significant landscapes, and biodiversity).

Cultural Property Rights

The concept that a society, especially that of indigenous peoples, has the authority to control the use of its traditional heritage. Cultural property rights are roughly analogous to copyright, but the rights are held by a

community rather than an individual and the property protected was received by transmission through generations rather than being consciously created. Cultural property rights have not been generally established or codified by statute in the United States, although the Native American Graves Preservation and Repatriation Act (NAGPRA) may be seen as recognizing those rights. Other countries, notably Australia, have begun to codify cultural property rights.

Dark Archive

A dark archive is a repository that stores archival resources for future use but is accessible only to its custodian. A dark archive does not grant public access and only preserves the information it contains. The information can be released for viewing depending on its donor and organizational restrictions, at which time it is no longer considered "dark."

Data dictionary

A data dictionary is a collection of names, definitions, and attributes about data elements that are being used or captured in a database, information system, or part of a research project. It describes the meanings and purposes of data elements within the context of a project, and provides guidance on interpretation, accepted meanings and representation.

Data integrity

Refers to the trustworthiness of system resources over their entire life cycle.

DCMI (Dublin Core)

The Dublin Core, also known as the Dublin Core Metadata Element Set, is a set of core elements for describing resources. DCMI stands for "Dublin Core Metadata Initiative." Dublin Core is a widely used metadata standard.

De-duplication

De-duplication refers to techniques for eliminating duplicate copies of repeating data.

Deed of gift

The deed of gift is a form that confirms a legal relationship between the donor and repository that is based on a clearly articulated and common understanding.

Description

Description is the process of analyzing, organizing, and recording details about the formal elements of a record or collection of records, such as creator, title, dates, extent, and contents, to facilitate the work's identification, management, and understanding. Description can be done at the collection level or the item level.

Descriptive metadata

Descriptive metadata is information used to search for and locate an object such as title, author, subjects, keywords, and publisher. Descriptive metadata allows users to locate, distinguish, and select materials on the basis of the material's subjects or 'aboutness.' It is distinguished from information about the form of the material, or its administration.

Digital

Digital records, archives, media, projects, activities, responsibilities, etc. are those involving or making use of computer devices, data, or media.

Digital archival storage

Digital storage refers to a digital method of keeping data, electronic documents, images, etc. in a digital storage location, usually a hard drive or in cloud-based storage. Archival digital storage is not the same as a

backup — archival storage keeps content accessible for future users and computers, while backups keep your computer files working safely and securely.

Digital Asset

A digital asset is a single computer file, or group of computer files, the content of which is valuable to your organization.

Digital content (digital materials)

Digital content refers to any item created, published or distributed in a digital form, including, but not limited to, text, data, sound recordings, photographs and images, motion pictures and software. Born-digital content has never had an analog form, and differs from analog documents, movies and photographs that were digitized - that is, scanned or converted to a digital format. This term is used interchangeably with digital materials.

Digital curation

Digital curation is the act of maintaining and adding value to a body of digital information for future and current use; specifically, the active management and appraisal of data over the entire life cycle.

Digital Forensics

Digital forensics refers to a set of tools and methods for copying and analyzing all of the digital information from a physical medium in such a way that ensures the integrity and authenticity of the information are preserved.

Digital Millennium Copyright Act (DMCA)

The Digital Millennium Copyright Act (DMCA) addresses important parts of the relationship between copyright and the internet. It established a notice-and-takedown system, among other provisions.

Digital object

A digital object is an item, either born digital or analog, which has been targeted for digital preservation and its accompanying metadata.

Digital Obsolescence

Digital obsolescence refers to a situation where a digital resource is no longer readable because of an archaic format: the physical media, the reader (required to read the media), the hardware, or the software that runs on it is no longer available.

Digital preservation

The term digital preservation encompasses all of the activities, policies, strategies, and actions required to ensure that the digital content designated for long-term preservation is maintained in usable formats, for as long as access to that content is needed or desired, and can be made available in meaningful ways to current and future users, for as long as necessary regardless of the challenges of media failure and technological change. Digital preservation goals include ensuring enduring usability, authenticity, discoverability, and accessibility of content over the very long term.

Digital preservation plan

A Digital Preservation Plan describes actionable steps to be taken to preserve digital resources within an organization (the Action Plan), and documents how this Action Plan was chosen.

Digital preservation policy

A digital preservation policy is the mandate for an archive to support the preservation of digital records through a structured and managed digital preservation strategy.

Digital project

any project that involves the creation, storage, or management of digital files

Digital provenance

Digital provenance refers to information about the origin of a digital object and any changes that may have occurred over the course of its life cycle.

Digital Public Library of America (DPLA)

The Digital Public Library of America (DPLA) is a US project aimed at providing public access to digital holdings in order to create a large-scale public digital library.

Digital readiness

Having the knowledge, tools, resources and infrastructure to provide online public access to archives and historical records

Digital return

Digital return is the transfer of cultural heritage materials back to a community in digital form.

Digital stewardship

the management of digital objects throughout their life cycle to facilitate their long-term preservation and use

Digital storage

Digital storage refers to a digital method of keeping data, electronic documents, images, etc. in a digital storage location, usually a hard drive or in cloud-based storage. Archival digital storage is not the same as a backup — archival storage keeps content accessible for future users and computers, while backups keep your computer files working safely and securely.

Digitization

Digitization is the process of creating digital copies or "surrogates" by scanning or otherwise converting analog materials. Digitization is the conversion of analog information into digital information.

Disaster threat (level, area)

Disaster risk zones show the likelihood of various natural disasters affecting a particular geographic area. It is advisable to have digital storage options in various disaster risk zones different from your own; for instance, if your area is prone to earthquakes, choose cloud-based backups in an area not prone to earthquakes (and ideally not prone to natural disasters at all).

Disposition

Disposition is the final action that puts into effect the results of an appraisal decision for a series of records. Transfer to an archival institution, transfer to a records center, and destruction are among possible dispositions.

Diversity

Diversity refers to: 1) Understanding and valuing characteristics of those who demonstrate a wide range of characteristics. 2) Audiences whose members exhibit a wide variety of characteristics. In both definitions

those characteristics include different ethnic and racial backgrounds, age, physical and cognitive abilities, family status, sexual orientation, socioeconomic status, religious and spiritual values, and geographic location.

DPI (dots per inch)

Dots per inch, or DPI, refers to the number of printed dots contained within one inch of an image printed by a printer. It is a measure of the resolution of a printed document or digital scan -- a higher DPI is a sharper image; a lower DPI is a fuzzier image.

Electronic records

Electronic records are those created digitally in the day-to-day business of an organization, such as word processing documents, emails, databases, or intranet web pages.

Emulation

Emulation refers to a means of overcoming technological obsolescence of hardware and software by developing techniques for imitating obsolete systems on future generations of computers.

Europeana

Europeana is a web portal created by the European Union containing digitized museum collections of more than 3,000 institutions across Europe.

FADGI

FADGI stands for the Federal Agencies Digital Guidelines Initiative. Their Technical Guidelines for Digitizing Cultural Heritage Materials are best practices for cultural heritage imaging for still images.

Fair Use

In its most general sense, a fair use is any copying of copyrighted material done for a limited and "transformative" purpose, such as to comment upon, criticize, or parody a copyrighted work. Such uses can be done without permission from the copyright owner. In other words, fair use is a defense against a claim of copyright infringement. If your use qualifies as a fair use, then it would not be considered an infringement.

File format

Digitally, a file format is a standard way that information is encoded for storage in a computer file. A file format is often indicated by a file name extension, for example .tif, .pdf, or .jpg.

File naming convention

A file naming convention is a set of rules used to create consistent names across a set of files.

Fixity

Fixity refers to the "unchangedness" of data, usually evidenced by identical and persistent checksums generated from the same file over time. Fixity refers to the stability of a digital object over time.

Format migration

Format migration refers to a means of overcoming technological obsolescence by transferring digital resources from one hardware/software generation to the next.

Full (digital) preservation

Full digital preservation is the use of format migration, emulation, digital forensics, and other strategies to ensure that the content of digital materials, rather than just the original bits and bytes, remain protected and accessible over time despite technology obsolescence and the need for refreshed storage media.

Gap analysis

Gap analysis is the comparison of actual performance with potential or desired performance. In libraries, archives and museums, this can refer to gaps in collections, procedures, documentation or other work areas.

Hard disk drives

Hard disk drives are a form of magnetic media that have magnetic platters read by spinning arms.

Hard drive (external, portable, SSD)

An external hard drive plugged into a computer port rather than installed inside a computer. Used for storage and backups. SSD=Solid State Drive

Harmful content statement

A content statement might also be known as a harmful content statement. It is a brief introduction to materials that may be traumatic, triggering, hurtful or harmful to an unaware patron. See: Content Statement

HathiTrust

Founded in 2008, HathiTrust is a not-for-profit collaborative of academic and research libraries preserving 17+ million digitized items.

IMLS

The Institute of Museum and Library Services (IMLS) is an independent federal agency that provides library grants, museum grants, policy development, and research.

Inclusion gaps

In archives, "inclusion gaps" refers to voices or materials that may not be in your collections but perhaps should be. For instance, Native Americans occupied your geographic location long before your current organization began collecting records; are Native American voices respectfully represented anywhere? Likewise, do women, people of color, people with disabilities, etc. have voices in your materials?

Intellectual property rights

Intellectual property rights are the rights given to persons over their literary or artistic works. They usually give the creator an exclusive right over the use of his/her creation for a certain period of time. Intellectual property rights are governed by copyright restrictions.

Internet Archive (Wayback Machine)

Internet Archive is a non-profit library of millions of free books, movies, software, music, websites, and more. The Wayback Machine is a digital archive of the World Wide Web, founded by the Internet Archive, a nonprofit library based in San Francisco. It allows the user to go "back in time" and see what websites looked like in the past.

Inventory

In archives, an inventory refers to a lists of holdings: archival items, collections, photographs, or recordings.

Legacy Media

Legacy media are carriers of digital information that are either obsolete or becoming obsolete soon. Files on legacy media should be given higher prioritization in digital preservation to prevent their permanent loss.

Legacy Planning

In organizational development, legacy planning refers to a leadership or management strategy that prepares the next generation or wave of leaders to step in to leadership roles in an organization.

Legacy System

A legacy system is software or hardware that was built using methods that are outdated or obsolete.

LOCKSS principle: Lots of Copies Keeps Stuff Safe

Digital preservation principle that Lots Of Copies Keep Stuff Safe.

Lossless format

Lossless formats are file formats that are stable and therefore compatible with long-term preservation efforts. In general, these formats have the following characteristics: openly documented; supported by a range of software platforms; widely adopted; lossless data compression or no compression; non-proprietary; and does not contain embedded files or embedded programs.

Machine-readable

Machine-readable means that the information is in a medium or format that requires a mechanical device to make it intelligible to humans. Machine-readable is commonly used to refer to digital computer data files.

Master copy

Master copy is a term used to describe an original, unmodified analog or digital file. Due to the negative connotations of the term "master," archival copy, preservation copy, or primary copy are preferred terms.

Media deterioration or degradation

Deterioration or degradation is the breakdown of an analog object that holds digital objects, potentially causing the digital objects on the media to no longer be retrievable.

Metadata

Metadata is a Latin term meaning "information about information." In the digital realm, metadata is data that describes key information about digital objects (image files, text files, digital audio/video) and, when appropriate, the original objects they represent. Types of metadata include administrative, descriptive, structural, and technical.

Metadata elements

Metadata elements are defined data points that are used to capture information about a resource. Some of these data points might include a title, an identifier, a creator name, or a date.

Metadata standard

A metadata standard is a system or set of rules that ensure descriptive information is applied consistently across your items. DublinCore is a commonly-used metadata standard in digital archives.

Monitoring

Monitoring refers to logging or recording various aspects of digital storage configuration, including hardware, activity, and data integrity.

Mukurtu

Mukurtu is a free and open source community archive platform designed with the unique needs of Indigenous communities, libraries, archives, and museums in mind.

NAGPRA

The Native American Graves Protection and Repatriation Act passed in 1990 requires public and private institutions that have received federal funds to inventory Native American objects in their care, notify the appropriate cultural or tribal representatives, and return the objects if requested.

NDSA

The National Digital Stewardship Alliance is a consortium of universities, professional associations, businesses, government agencies, and nonprofit organizations, all committed to the long-term preservation of digital information. Members work together to preserve access to digital heritage. NDSA's institutional home is the Digital Library Federation (DLF), at the Council on Library and Information Resources (CLIR).

NEH

The National Endowment for the Humanities is a grant-funding organization. It is one of the largest funders of humanities programs in the United States.

NHPRC

The National Historical Publications and Records Commission (NHPRC) is a statutory body affiliated with the National Archives and Records Administration (NARA). The NHPRC supports a wide range of activities to preserve, publish, and encourage the use of documentary sources relating to the history of the United States. Many cultural heritage grants come from the NHPRC.

OAI-PMH

The Open Archives Initiative Protocol for Metadata Harvesting is a protocol for harvesting (collecting) descriptive metadata records from a repository so that services can be built using metadata from many sources. Simply put, OAI-PMH is a way for repositories to structure and exchange information in the same formats.

OAIS

OAIS is an acronym that stands for Open Archival Information System. The system gives the digital preservation community a common language and outlook for talking about digital preservation.

Obsolescence

Format or technology obsolescence occurs when a piece of software or hardware is no longer in wide use or available at all. This causes it to be difficult or impossible to use any files that depend on this software or hardware.

OCLC

OCLC was originally the Online Computer Library Center. OCLC produces and maintains WorldCat library catalog system and CONTENTdm for managing digital collections.

OCR (optical character recognition)

Optical Character Recognition (OCR) is the process that converts an image of text into a machine-readable text format.

OHMS

OHMS (Oral History Metadata Synchronizer) is a web-based system used to inexpensively and efficiently enhance access to oral history online. OHMS provides users word-level search capability and a time-correlated transcript or indexed interview connecting the textual search term to the corresponding moment in the recorded interview online.

Omeka

Omeka is an online platform that offers open-sourced web publishing and digital collection sharing services.

Open source software

Open source software is developed through public collaboration and distributed without charge. Because

open source software is free, it is more likely to continue to be usable longer than paid software, which may discontinue supporting the programs at any time.

Optical media

Optical media refers to any data storage device or equipment that uses optical data storage and retrieval techniques to read and write data. It stores data digitally on a media device and uses a laser to read data from it. Optical media is also referred to as optical storage.

Organizational mission statement

The organizational mission defines the purpose of the institution, including who it serves, how it provides those services, and what unique assets it uses to provide the service. The mission statement guides all activities of the institution.

Orphan works

An orphan work is a copyright-protected work for which rights holders cannot be determined or, if known, cannot be contacted.

PastPerfect

PastPerfect Museum Software is an application for collections archiving. It is designed for museums, but may be used by various institutions including libraries, archives, and natural history collections. PastPerfect allows for the database storage of artifacts, documents, photographs, and library books.

Personally Identifiable Information (PII)

Personally Identifiable Information can be used on its own or with other information to identify, contact, or locate a single person, or to identify an individual in context.

Pixel

A pixel is an element in an array that forms an image, a tiny dot. It is a unit of measure used to describe the size or resolution of an image, i.e. pixels per inch.

Point of Failure

A single point of failure is a part of a system that, if it fails, will stop the entire system from working. In digital collections, a goal should be redundant forms of storage so that no single failure can significantly affect the collections.

PPI (pixels per inch)

Image resolution is typically described in PPI, which refers to how many pixels are displayed per inch of an image. Higher resolutions mean that there more pixels per inch (PPI), resulting in more pixel information and creating a high-quality, crisp image. Images with lower resolutions have fewer pixels, and if those few pixels are too large (usually when an image is stretched), they can become visible.

PREMIS

PREMIS is an acronym that stands for Preservation Metadata: Implementation Strategies. PREMIS metadata structures and describes what sort of preservation actions have been done to a digital object.

Preservation

Encompasses all efforts (including conservation) to keep, maintain or improve the condition of collections to counter man-made damage or the natural effects of time. Activities include digitization which adheres to Federal Agencies Digital Guidelines Initiative (FADGI) best practices for video and audio; digitization which adheres to Library of Congress guidelines for film; and photochemical restoration of film.

Preservation files

A preservation copy refers to digital content targeted for preservation that is considered the archival version of the intellectual content of a digital resource. Preservation copies generally do not undergo significant processing or editing. Preservation copies are often used to make other copies, including reproduction and distribution copies. See Archival Copy, Access Copy, Master Copy.

Preservica

Preservica is a digital preservation and access program available in both a cloud hosted and on-premise edition. The solution includes a suite of OAIS (open archival information system) compatible workflows for ingest, management, storage, access and long-term preservation of digital content.

Preview

A preview file is a reduced size or length audio and/or visual representation of content, in the form of one or more images, text files, audio files, and/or moving image files.

Provenance

Provenance refers to the origin or source of something. In archives, it is information regarding the origins, custody, and ownership of an item or collection.

Public domain

The term "public domain" refers to creative materials that are not protected by intellectual property laws such as copyright, trademark, or patent laws. The public owns these works, not an individual author or artist.

Quality control

Quality control (QC) or quality assurance (QA) is a process used to verify the quality, accuracy, and consistency of digital projects. A regular systematic QC process allows you to check for files that do not meet the standards of your project plan, and identify any problems.

Redundancy

Redundancy refers to the creation and retention of multiple near-identical copies of the same data, stored in different digital locations.

Replication

Replication is the automated copying of data from one primary storage location to another or several other storage locations. Replication is distinct from redundancy in that it dynamically updates the secondary storage locations.

Retention schedule

Also known as "digital asset retention and disposition schedule." A document that identifies digital assets (typically by asset groups) and the date on which their disposal must take place. Often, the date will be recorded as "indefinitely," but this can be revised as an institution's inventory is reviewed.

Rights management

Rights management refers to a system that identifies intellectual property rights relevant to particular works and that can provide individuals with access to those works on the basis of permissions to the individuals.

Rights statements

A simple, standardized system of labels that clearly communicate the copyright and re-use status of digital objects to the public, which improves usability and access for users.

Scanner

An image scanner is a device used to scan images, printed text and objects into a digital format.

Storage diversification**Sustainability**

In this context, sustainability refers to activities to ensure your project can continue, for example: 1) Creating and documenting policies, procedures and workflows, 2) Creating training materials for future project staff, 3) Developing a digital preservation plan, 4) Building organizational or community support for the project, 5) Pursuing additional grants or more permanent funding to support the project work.

Sustainable Heritage Network

The Sustainable Heritage Network (SHN) is an answer to the pressing need for comprehensive workshops, online tutorials, and web resources dedicated to the lifecycle of digital stewardship.

Technical metadata

Technical metadata refers to information about aspects of the object related to its file format or the software used to create the file. This may include things like the scanning equipment used to create a digital object and the settings used to create or modify it.

Technical protection measure

A technological protection measure is a technical means (hardware, software or both) of preventing a digital resource (usually one sold commercially) from being copied, such as a copy lock or a watermark.

Traditional Knowledge (TK) Labels

TK Labels are a tool for Indigenous communities to add existing local protocols for access and use to recorded cultural heritage that is digitally circulating outside community contexts.

Transcription

Transcription is the process of making a written copy of a recording or document. For audio or video recordings, a transcription is a written copy of the spoken material. For handwritten archival artifacts, a transcription is a typed, usually digital, version of the handwriting.

User

A user is an individual who uses the collections and services of a repository; a patron; a reader; a researcher; a searcher.

Versioning

Versioning is the systematic saving and tracking of files when changes are made. It allows the user to retrieve earlier versions and establish the authoritative copies.

Virus scan

A virus scan checks for malicious programs and macros on a computer or electronic device.

Web archiving

Web archiving is the process of gathering up data that has been recorded on the World Wide Web, storing it, ensuring the data is preserved in an archive, and making the collected data available for future research.

Workflow

A workflow consists of the tasks, procedural steps, organizations or people, information and tools needed for each step in a process.

Working copy

A working copy is a digital asset derived from an archival copy. Working copies can be modified to suit the needs of the project at hand.

XML

XML stands for eXtensible Markup Language. XML is one of the most common ways used to represent meta-data.