

**Digitization of Local Collections Task Force
Morgan Library, Colorado State University Libraries
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Part One

I. Introduction

II. Summary of Charge

III. Methodology and Local Observations

IV. Aggregated Digitization Projects Versus Item-Level Digitization Requests

I. Introduction

Large scale in-house digital imaging activities at Morgan Library commenced in 1999 with the *Garst Project*; a digitization of 1,000 images selected from 19,537 slides deeded to the library by Mutual of Omaha's "Wild Kingdom" videographer Warren Garst and his wife Genevieve ("Genny"). One unusual aspect of this first digitization project was that it was managed by two Colorado State University undergraduate zoology majors—Bridget Breitbach and Rachel Tracey—with the assistance of interim personnel librarian Theresa Y. Neely and other Morgan Library faculty and staff.

In a 2002 article published in *Reference Services Review*, Breitbach, Tracey and Neely describe various time management, quality control and process-based problems encountered throughout the course of this project. While attributing some of these problems to a lack of digitization experience on the part of the staff and student managers, the authors note that some of the problems might have been mitigated, or even alleviated, had there been more institutional procedural/workflow policies in place at the onset of the project and more advance planning regarding the organization and descriptive fields (metadata) given to the materials being digitized. (**See: Managing a Digital Collection: The Garst Photographic Collection** in *Reference Services Review*, Volume 30, Number 2, 2002, pp. 124-142).

Subsequent to the Garst collection, other major in-house digitization projects at Morgan Library have included *Germans from Russia* (2001-2003), *Colorado's Waters Digital Archive* (2004-2005), and the *Sound Model Project* (an analog to digital conversion of oral history interviews slated for completion in 2006). While acquisition of the Colorado International Poster Collection was originally spearheaded by the University's Art Department and digitization done outside of the Library, Morgan Library staff members have become increasingly involved with the digital presentation and access for this collection.

The Digitization of Local Collections Task Force was formed as a response to the growing need for established standards and procedural organization to accompany the digitization projects that CSU Libraries staff has become routinely involved in. With the increase in acquisitions of water and agricultural-related archival collections and the pending transfer of over 300,000 University photographs (digital and print format) from the former Office of Information Services (OIS), there is also a current urgency in establishing standardized workflow, communication, and procedural organization to our digitization endeavors.

II. Summary of Charge

Carmel Bush, Assistant Dean of Digital and Collection Services, established the Task Force on August 11, 2005. The charge of the Task Force was to investigate "best practices" as well as give procedural overviews and recommendations in the following areas:

- Request method (including conformance with copyright or ownership of image)
- Handling and preservation of original materials
- Scanning standards (print photographs, audio, film, video)
- In-house or external scanning determination
- Scanning method
- Tracking of materials
- Quality control
- Metadata standards
- Control of requests and sales by users for images/rights management
- E-metrics Reporting

Carmel also charged the Task Force with providing recommendations for "making the digital object persistent" as well as "managing digital files for the long term so that users benefit from durable collections".

The Task Force submitted its findings in a final report on November 30, 2005.

III. Methodology of the Task Force and Overall Observations

Given a condensed three month timetable from mid-August through November 2005 in which to complete their research and findings, members of the Task Force met on the following dates: August 26th, September 16th, October 4th, October 12th, October 31st, and November 14th. Outside of group meetings, members of the Task Force communicated with the Chair via individual one-on-one sessions and e-mail. To further facilitate communication, in late September Task Force member Tami Morse-McGill set up a wiki area for the DLC Task Force with the help of Greg Vogl.

Individual members of the Task Force diligently researched a wide variety of topics germane to the field of digitization and then brought back their findings to be discussed by the group as a whole. It was the observation of the Task Force that many standards and best practices in the field have already been established by academic research libraries (i.e., the University of California system and University of Michigan) and institutions such as the National Archives and Records Administration (NARA), the Collaborative Digitization Program (CDP), the Northeast Document Conservation Center (NEDCC), the Society of American Archivists (SAA), Conservation Online, NISO, and the Library of Congress. In the course of their literature review, Task Force members found

topical materials easily accessible through internet-based white papers and reports, as well as printed publications (see, for example, Handbook for Digital Projects: A Management Tool for Preservation and Access, NEDCC, 2000).

In all cases, Task Force members worked to synthesize best practice findings and adapt procedural recommendations to best suit the culture, resources and staffing configuration at CSU Libraries. In the instances where there were no best practices recommendations in the literature (i.e., file naming and material tracking), the Task Force has based its recommendations on standard practice, case study examples or common sense. For several topics an overview of different institutional practices has been provided, rather than specific recommendations. The CONTENT dm section outlines procedures for using version 3.8 with a nod to version 4.0.

In addition to their research, members of the Task Force identified the digitization issues facing Morgan Library that were of highest concern to them. They are as follows:

1. Lack of systematic project planning; lack of institutional documentation of "lessons learned"

It was the observation of the Task Force that a lack of past experience in digitization project management—as well as a lack of application of "lessons learned" from prior projects—can sometimes lead to an improvisational approach to a new digital endeavor. With this in mind, Task Force members recommend that an online "case file"—documenting digitization activities through forms, correspondence, workflow charts, etc.—be kept of each project for future reference. This might be part of a "Digitization of Local Collections" web site that would be created off of the Libraries homepage by members of the Task Force. This site would provide links to useful web pages, recommendations, standards and procedures.

2. A need to prioritize digitization projects and a need for more articulation of their long term benefits

The Task Force noted that there is a need for more scrutiny and prioritization of the digitization projects we embark upon and a more articulated rationale of how they fit with our institution's mission and functions.

In order to be proactive rather than reactive, it was suggested that we need to create a cross-departmental prioritized list of proposed digitization projects. We also recommend having a mechanism in place that would assist in following-up on digital projects (i.e., When should the site be revised? When should content be added? When should items be taken down from a site?).

3. A need for greater awareness of staff and budget shortages and how this impacts digitization projects; a clearer delegation of tasks

There was concern among Task Force members that we needed to be aware of other pending and ongoing library projects when preparing for digitization activities and plan accordingly in order to avoid staff overload. One example of this is the cyclical nature of work in acquisitions and cataloging which creates labor-intensive times in the fall and winter and slow times in the summer and late spring. Mention was made, also, of the matrix structure of the library's Digital Unit and how it makes explicit the need for more formal scheduling and organization across units.

Another concern was the recent closure of OIS and what that meant to staff workload and the library's responsibility for digitizing materials previously handled by this unit. The question was raised whether we would be responsible for and capable of digitizing the International Poster Collection in the future.

4. A need for communication between departments

It was the observation of the Task Force that we need more interaction across departments when embarking on our digital projects and need to experience shared enthusiasm for our undertakings.

5. A need for increased visibility of digitization projects

The Task Force noted that we need to increase visibility of our digital projects and continue to promote ourselves on campus.

IV. Aggregated Digitization Projects versus Item-Level Digitization Requests

It is important to note that the Task Force made a distinction between large, aggregated digitization projects (i.e., Garst, Germans from Russia) and ad hoc/"as needed" digitization requests at an item level (i.e., the scanning of several photographs for a brochure, event, web page, etc.).

While some of the recommendations in this report are directed towards large, aggregated, projects that the Library might be involved in, other recommendations—such as those found in the scanning standards, quality control, and handling and preservation sections of this report—are equally applicable at the item and aggregated level. In acknowledgement of the need for procedures and tracking of individual items that are earmarked for digitization, the Task Force has created a form to be used for item level digitization requests (see appendices section of this report, Appendix B: Forms and Checklists)

Part Two

V. Background Research, Topical Observations, Best Practice Guidelines, and Recommendations of the Task Force

Section A: Project planning and management

i. Background

In order to produce consistent, reliable, predictable results, and assure optimum utilization of available resources, the Libraries must employ a system that explicitly aligns digital project work with the current strategies of the organization. This system, or "project management", is a comprehensive structure which, when mastered by an organization, translates solid ideas and plans into behaviors that produce tangible results and ensure consistent operational success. The members of a team that have developed project planning and management skills communicate using a common language, understand their individual roles and responsibilities, and are motivated to contribute their best effort by an appreciation of their individual contribution to the success of the project and the organization.

ii. Recommendations

The Coordinator for Metadata and Digital Services attended an excellent project planning and management workshop at BYU in the spring of 2005, sponsored by the Greater Western Library Alliance (GWLA). The system employs the use of various tools for detailed planning and execution of a project, with an eye to identifying major deliverables; defining the structure of the project; listing every task and assigning ownership to those tasks; estimating completion time; defining requirements for successful project completion; and identifying risks associated with a project and actions to minimize those risks should they occur. These activities are considered in terms of scope, schedule, and resources in the following way (see also: ***Project Description Document (PDD) for Digitization Projects***):

Preliminary Planning Elements for Digitization Projects

- **Description of Project**
 - *Strategy*
 - *Responsibility*
 - *Timeline*
 - *Potential Funding Sources*
- **Project Object Statement (POS)**
 - *Scope*
 - *Schedule*
 - *Resources*

- **Flexibility Matrix for Scope, Schedule, and Resources**
 - *Least Flexible*
 - *Moderately Flexible*
 - *Most Flexible*
- **Success Criteria**
- **Major Deliverables with Is/Is Notes**
- **Work Breakdown Structure (WBS)**
- **Schedule (i.e., Gantt Chart)**
 - *Duration of Tasks*
 - *Milestones for Accomplishment*
- **Risk Assessment Chart**
 - *Risk Area*
 - *Likelihood*
 - *Impact*
 - *Detection Difficulty*
 - *Overall Risk*
- **Risk Management Planning Matrix**
 - *Risk Area*
 - *Preventive Action*
 - *Contingency Action*
 - *Trigger(s)*
 - *Owner(s)*

The Task Force recommends use of this system at the start of all aggregated digital projects in tandem with the ***Digital Project Resource Assessment Checklist*** (see following form). For Item-Level/Ad Hoc digitization requests use the ***Request to Digitize Items from Local Collections*** form.

For an excellent and comprehensive overview of the elements of digital project planning the Task Force also recommends reference to the ***NDLP Project Planning Checklist: Library of Congress, National Digital Library Program*** (Appendix A)

PROJECT DESCRIPTION DOCUMENT (PDD) FOR DIGITIZATION PROJECTS

DESCRIPTION OF PROJECT:

This is the project strategy.

PROJECT OBJECTIVE STATEMENT (POS)

This is a more focused statement of the project strategy identifying the project targets and includes scope (what the project will accomplish), schedule (when it will start and finish), and resources (people, money, etc.) A project flexibility matrix is considered to show which of the three is most flexible when problems are encountered.

SUCCESS CRITERIA

These define requirements for successful project completion: what needs to be included, what does not need to be included.

MAJOR DELIVERABLES WITH IS/IS NOTS

These are tangible items created as a result of the project work and that fulfill needs of internal and for external customers. They define what the project is expected to produce. Use the Is/Is Not list to clarify the deliverables (think of the list as includes/excludes, in scope/not in scope).

WORK BREAKDOWN STRUCTURE (WBS)

This defines the project structure and includes 4-7 major components of work. For each component you show tasks. For each task assign ownership, identify the deliverable, estimate time to complete, and indicate completion criteria.

SCHEDULE

A Gantt chart or other tool shows the duration of tasks and milestones for accomplishment of the project.

RISK MANAGEMENT

Identify circumstances, events or other that may inhibit the conduct of the project.

CONTINGENCIES

These are preventative actions to avoid what is defined under Risk Management.

DIGITIZATION PROJECT PROPOSAL PLANNING FORM

Project Name

Summary of Project (100 words or less)

Principle Project Planner(s)

Other staff and their responsibilities:

Detailed Project Description

Scope and extent of the project

(including number, type, and location of items, locations, selection criteria)

Goals of the project

How does project support mission and goals of CSU and the Libraries?

Similar projects

Detailed Digitization Plan

Original Materials to be Digitized

(including type and number of items: Books [est. total# of pages], Slides, Manuscript pages, Film, Audio, Maps, Photographs [B&W and color], etc.)

Governance and Rights Plan

(including ownership of the materials, copyright issues, intellectual property rights, etc.)

Bibliographic Control

(for both original materials and digital files; finding aids for archival materials, etc.)

Metadata

(including metadata schema, special requirements, etc.)

Preservation of Original Materials

(including assessment of conservation treatment and storage needs)

Systems Management

(including type and number of derivative files, scanning standards, file size estimates, potential addition content to files at a later date, storage issues, archiving issues, etc.)

Public Access

(including intended audience, methods of resource delivery, web page design, etc.)

Projected Timeline

(including starting time, milestones, completion dates and whether dates are fixed, etc.)

Staffing

(including estimated hours for scanning, cataloging, metadata creation, preservation assessment and treatment, selection of materials, web page creation, training issues, quality control, etc.)

Budget and Source of Funds**Hardware and Software and Scanning Standards**

(including available and needed items)

Potential Vendors/Out-Sourcing (including type of activity)**Grant Details**

(including name of grant, anticipated start and completion dates, status of application, etc.)

Evaluation Procedures upon Completion

Form prepared by:

Date

DIGITAL PROJECT RESOURCE ASSESSMENT CHECK LIST

- 1 Project Name:
- 2 Project Manager(s):
- 3 Project Staff:
- 4 Is this project part of a grant? Yes No
 If yes, Name of grant:
 Grantee:
 Has the grant been applied for: Yes No
 Has the grant been funded? Yes No
- 5 Is this project similar to a previous digitization project?
 If so, what project?
- 6 Anticipated Start Date: Estimated Completion Date
- 7 Role of Digital & Collective Services staff:
 Administration Advisory Team
 Cataloging Grant writing
 Metadata Creation Preservation assessment
 Rights Management Scanning/Cleanup
 Selection of materials to be digitized
 Specifications writing
 Web page creation
- 8 Type of materials to be digitized and estimated numbers of each:
 Books: [est. total# of pages] Slides:
 Manuscript pages: Film:
 Maps: Others:
 Photographs: Oversized?
 Audio:
- 9 Location of materials to be digitized:
 CSUL Other
- 10 If materials are at CSUL, does CSUL own the rights to the material?
 Yes No
- 11 Are CSUL materials in our online catalog ?
- 12 Has condition assessment of CSUL materials been done?
- 13 Estimated staff requirements for scanning
- 14 Estimated staff requirements for metadata creation.
- 15 Does any part of the project need to be outsourced? Yes No
 If yes, which part?
- 16 What supplies and/or new equipment are required? Who is providing the funds?
- 17
- 18

Section B: Copyright and ownership of image

i. Background

The U.S. Copyright Act recognizes that all intellectual works (articles, books, data, pictures, architectural design, software, motion pictures, sound recordings, and so forth) are automatically covered by copyright unless it is explicitly noted to the contrary. The owner of a copyright has the exclusive right to reproduce, distribute, perform, display, or license his or her work. The owner also has the exclusive right to produce or license the production of derivatives of his or her work. Under current law, works are covered whether or not a copyright notice is attached and whether or not the work is registered.

ii. Recommendations

The Task Force recommends the following steps to take in dealing with copyright and ownership of image when digitizing local collections:

1. Determine copyright and ownership of objects

When digitizing documents or other objects to be made available on the World Wide Web, a library first needs to determine whether the item is protected by copyright or whether it is in the public domain. If the material is protected by copyright, the library will need to obtain permission from the copyright owner before making the digitized copy available through the World Wide Web. If the item is in the public domain, the library does not need permission to digitize it and make it available.

To determine whether an item is protected by U.S. copyright law, a library must find the answers to five questions:

1. Is the item published or unpublished?
2. What year was it published, or if unpublished, what year was it created?
3. If published before 1989, does it have a notice of copyright (© or the word Copyright or Copra)?
4. If published between 1923 and 1963, was the copyright renewed before 1964 when renewal became automatic?
5. Is the author dead, and if so, in what year did he or she die?

Source: <http://www.mlcnet.org/services/copydigitize.php> (see appendices section of this report, Appendix A—Attachments: *Copyright Issues for Libraries When Digitizing Materials for the Web*)

When considering whether the work is in public domain, reference <http://vvvvw.unc.edu/%7Euncing/public-d.htm> (see appendices section of this report, Appendix A—Attachments: *When U.S. Work Passes into the Public Domain*)

2. If the work is copyrighted, obtain permissions from the owner

Reference Model: Kluge Project
(see appendices section of this report, Appendix A—Attachments: Kluge Project, Grant of Permissions Letter and Form)

Note for Legal Review:

The Task Force would like to note that development of any form that involves legal items must go through Libraries Administration to the University for legal review. Project managers are responsible for checking to determine if legal items are involved as well as responsible for going through the review process if necessary.

3. Refer to copyright statement models such as the ones listed below

Reference Model A: ***Germans from Russia***

<http://lib.colostate.edu/gfr/copyright.html>

<http://lib.colostate.edu/gfr/gfrfairuse.html>

Reference Model B: ***Garst Wildlife***

<http://lib.colostate.edu/wildlife/copyright.html>

<http://colostate.edu/wildlife/fairuse.html>

Reference Model C: ***International Poster Collection***

<http://lib.colostate.edu/posters/cprt.html>

Reference Model D: ***Water Resources Archive*** (relates to donation)

<http://lib.colostate.edu/archives/water/donating#html#copyright>

(see appendices section of this report, Appendix A—Attachments: Copyright Statement Reference Models)

As a final note: the Missouri Digitization Planning Project—Copyright and Intellectual Property Issues (Fall 2001) provides a good discussion on legal issues to consider when implementing digitization projects and points to a number of useful resources. (see appendices section of this report, Appendix A—Attachments: Missouri Digitization Planning Project—Copyright and Intellectual Property Issues)

iii. Reference Resources

Local Resources

ACNS (Academic Computing and Networking Services)—Copyright information at Colorado State University

<http://vwww.acns.colostate.edu/?page=copyright>

CSU Libraries: Copyright Resources

<http://lib.colostate.edu/research/copyright.html>

Note that the above reference includes links to external resources

External Resources

Missouri Digitization Planning Project—Copyright and Intellectual Property Issues

<http://www.virtuallymissouri.org/guidelines/copyright rev2.pdf>

Collaborative Digitization Program—Legal, Copyright, and Intellectual Property Resources

<http://www.cdpheritage.org/digital/legal.cfm>

Stanford University Libraries—Copyright and Fair Use

<http://fairuse.stanford.edu/>

Section C: Handling and preservation of original materials

i. Background

An overriding goal of any digitization project must be that no harm is done to the materials being scanned. Condition assessment of all materials must be done before the materials are scanned and if the material will not survive the scanning procedure, it should not be scanned. In addition no damage should be done to the item because of improper or excessive handling at any time. If problems develop during the process, scanning should be immediately ceased with follow-up review by the Preservation Librarian.

The condition assessment procedure is also a good opportunity to review items for basic conservation treatment, including replacement of non-preservation **quality housing and the addition of protective enclosures as needed.**

ii. Recommendations

Guidelines and recommendations of the Task Force are provided in the following two documents:

1. *Care and Handling Guidelines for Scanning and Digitization Projects*

The guidelines are divided into sections covering the work space, general care and handling guidelines and separate guidelines for books, maps, charts, and other oversized items, manuscripts, and photographic materials.

2. *Condition Review Sheet for Books & Paper Materials to be Digitized*

The review sheet provides a form for the physical condition assessment of the item to be scanned and for the assessment of the item in relationship to the scanning process (i.e., identification of books larger than the flat bed scanner of documents with uncut pages). "*Criteria for Selecting Items for Conservation Treatment Before Digital Scanning and During Scanning*" supplements this form.

iii. Resources

The three resources listed below are the most complete of the online resources found.

Library of Congress National Digital Library Program and Conservation Division.
Conservation Implications of Digitization Projects
<http://memory.loc.gov/ammem/techdocs/conservation.html>

National Library of Australia. Digitisation of Traditional Format Library Materials: Care and Handling Guidelines http://www.nla.gov.au/digital/care_handling.html

New York Public Library Digital Historical Projects. Planning Digital Projects for Historical Collections. <http://digital.nypl.org/brochure/planning.htm>

CARE AND HANDLING GUIDELINES FOR SCANNING and DIGITIZATION PROJECTS

GOAL: To protect materials in digitization projects so that no damage is done to the item because of improper or excessive handling.

This is also an opportunity to review items for collection treatment, including the replacement of non-preservation quality housing and the addition of protective enclosures.

WORK SPACE REQUIREMENTS

- * A clean and uncluttered environment
- * Security for the materials
- * Adequate cooling and air-condition to counteract heat that builds up from the equipment and lights (5 to 15 F)
- * UV filtered lights or those that give minimal UV readings; no UV energy in the scanner light source
- * Sufficient table space to allow for safe handling of materials. Recommendations are for table space 6 times the size of the largest object to be scanned in order to have enough free space work space.
- * Ideally, an over head scanner so that nothing touches the originals except the supports, book cradles and hands of the scanner operator.
- * Do not use scanners with an automatic sheet feed device, drum scanners or similar devices

GENERAL GUIDELINES

- * Collections to be digitized should be reviewed by the Preservation Librarian before the project begins to identify potential preservation problems (See Appendix A).
- * If during scanning the material is found to need repairs in order to scan it, have the repairs completed before the total documents is scanned, if at all possible.
- * Do not repair items yourself. Make notes on clean acid-free white paper as to the damage and hold for the Preservation Lab staff.
- * Prepare work spaces and surface before beginning work
- * No food or drink in the work space
- * Wash hands at the beginning of the scanning session, after eating, and regularly thereafter to ensure they are clean at all times. Do not use hand lotion.
- * Do not lick your fingers prior to turning pages

- * Cotton gloves may be used to protect paper and other materials from grease, oils and dirt on bare hands. Gloves, however, make fine handling more difficult
- * Handle the materials the least as possible
- * Do not place items on the floor, near windows or on radiators
- * Do not stack different sized items together
- * Make sure items are fully supported at all times
- * Transport items as much as possible in their folder and on book trucks
- * Be careful when removing fragile items from protective enclosures
- * Do not remove encapsulated materials from their encapsulation
- * Do not roll, pull, bend or fold materials
- * Always use pencil when working near materials
- * Never use collection items as a writing surface or a weight
- * When you need to mark a page use a piece of clean acid-free white paper – do not use a post-it note or other adhesive paper or plastics or a paper clip
- * Materials that are light sensitive, e.g., blueprints, should be protected from light sources whenever they are not being actually scanned.
- * Close books, cover documents, and return papers to folders when you leave the work area

BOOKS

- * Do not disband a volume for scanning unless approved by the Preservation Librarian and done by Preservation Lab staff.
- * If the sewing is restrictive and does not allow the book to open to 90 degrees, the book cannot be scanned. The materials may be reviewed for possible treatment.
- * Never force a spine open or apply hard or abrupt pressure to pages to open them
- * Turn pages by lifting the upper right corner and then supporting the page with your whole hand to turn it.
- * Support the sides of books that appear to have weak bindings and/or are designated for an opening of less than 180 degrees.

MAPS, CHARTS, and other OVERSIZED ITEMS

- * Be aware that maps and other oversized items are difficult to handle. Make sure there is enough space to handle and work with them and they are supported
- * Do not make new folds in maps
- * If a rolled item will not easily unroll, leave the map for the Preservation Lab staff. DO not force the item flat.

MANUSCRIPT ITEMS

- * Have any staples or pins removed before scanning. Do not re-staple.
- * Make sure materials remain in the same order as originally housed. Previously stapled materials can be placed in a folder to keep them together. If a sheet must be removed from the document, mark its place with a clean acid-free white sheet of paper. Always return documents to their original folders.
- * Smooth out wrinkles or folded items by gentle pressure with fingers and palms. If items are severely crumpled or damaged, put them aside for the Preservation Lab.
- * Make sure items are fully supported at all times. If necessary, place a support stand around the sides of the scanner to hold open sheets to prevent sagging and dangling while scanning.
- * If the item appears fragile or brittle, use a polyester film folder for scanning. Remember that polyester film has a static charge
- * Most items can be digitized on a flatbed scanner. Surfaces such as pastel, watercolor, graphite or charcoal should be digitized with an overhead camera.

PHOTOGRAPHIC MATERIALS

- * Make sure the flat-bed scanner is clean, wiping it with "screen cleaner" instead of a commercial detergent or cleaner
- * Make sure transparencies are securely in position. If possible, use the negative holder.
- * Be careful removing fragile slides and transparencies from boxes or sleeves; be sure to place slides back into their pocket properly.
- * Handle negatives and transparencies by their edges. Do not touch the surfaces of photographic emulsion. Do not place transparencies on top of each other.
- * Do not use any water-based solvents on photographic materials. Use a soft brush or photographs blower brush to clean dust negatives or photographs.
- * Do not try to flatten curved or curled photos that are mounted on board

- * Do not apply labels or identification stamps directly to photographic material, but on the packaging using stabile or B grade pencil.
- * Never use metal pins, staples, paper clips, rubber bands or adhesive tape directly in contact with photographic materials.
- * Protect photographic materials from extended exposure to light

Appendix A

Criteria for Selecting Items for Conservation Treatment Before Digital Scanning and during Scanning

DO NOT REPAIR THE ITEM — SEND IT TO THE PRESERVATION LAB

Books

- * Foldouts that require flattening or mending
- * Pages with large tears across the image area
- * Pages dog-eared or creased so that they obscure the text or image
- * Pages that are breaking off or brittle pages that would be damaged by scanning
- * Pages stuck together
- * Uncut pages
- * Books with text blocks that will not open even to 90 degrees

Paper

- * Tears that bisect the edge of the paper
- * Holes in the text or image
- * Creases and folds that obscure the text or image
- * Folded brittle paper that requires unfolding
- * Removal of staples

Photographs

- * Flaking or cracking of image
- * Tears or breaks in image area
- * Loss in image area
- * Adhesive tapes on the image
- * Photograph lifting away from the mount or backing

Slides

- * Torn protective covers
- * Wrinkled film
- * Separation of film
- * Tears or breaks in the image area
- * Loss in image area
- * Fingerprints in image area

Appendix B
Review Sheet for Books & Paper Materials to be Digitized

Item: _____

Call Number: _____ # of Pages _____

Size:

- _____ 8 1/2 x 11 inches or smaller
- _____ Larger than the scanner
- _____ Thicker than 1 1/2 inches

Cover

- _____ Cover/text attachment is strong
- _____ Cover/text weak or loose attachment
- _____ No cover

Leaf Attachment

- _____ Sewn
- _____ Adhesive bound
- _____ Single signature
- _____ Three-ring binder
- _____ Other: _____
- _____ Not bound

Pages

- _____ Flexible
- _____ Brittle
- _____ Pages breaking off at spine
- _____ Sewing through text

Other Information

- _____ Foldouts
- _____ Detachable materials
- _____ Non-book material included
- _____ Color illustrations
- _____ Other: _____

Conservation Treatment Required

- _____ Before Scanning
- _____ Separate uncut pages
- _____ Mend pages
- _____ Flatten foldouts
- _____ Mend foldouts
- _____ Open dog-eared pages obscuring text
- _____ Other: _____

Type of Material

- _____ Book/Pamphlet
- _____ Loose pages
- _____ Map
- _____ Photograph
- _____ Other: _____

- _____ Attachment strong and intact
- _____ Attachment broken with loose pages
- _____ Attachment broken/all pages attached
- _____ Gutter margin less than 1/2 inch

Book Opening

- _____ Opens to 180 degrees without stress
- _____ Opens < 90 degrees (cannot be scanned)
- _____ Opens 90 to 180 degrees without stress
- _____ Opens > 90 with stress

After Scanning

- _____ Rehousing
- _____ Rebinding
- _____ Repair foldouts
- _____ Repair pages
- _____ Reattach plates
- _____ Other: _____

Section D: Tracking of materials in the process of digitization

i. Background

The Task Force found that there were no "best practices" recommended for this topic. Other sources consulted do not indicate any standards or best practices for materials tracking – other than to do it, and use computer tools to do it. There was no information found regarding elements included in tracking information, database schemas or spreadsheet structures, etc. Sources consulted included the following:

CDP (personal contact with Jill Koelling)

LC American Memory technical info

NINCH Guide to Good Practice...

Vendor proposals received for Sound Model grant

NISO's Framework of Guidance for Building Good Digital Collections Cornell's

Moving Theory into Practice tutorial

NEDCC Handbook for Digital Projects

IMLS NLG project planning tutorial

ii. Recommendations and observations

1. As with naming, a unique identifier is necessary for materials tracking

While it's best if identifiers are marked on the piece itself, for archival items adding markings is not desirable. With this in mind, item identifiers could be constructed from consistent, unique markings already on the pieces—if any exist. Tracking should be done at the item level, with a related identifier for each piece of an item (e.g., an oral history interview and each of its tapes.)

2. For multi-site projects like WWDL or Sound Model, an institution code should be part of the identifier

Meaningful identifiers are better because they are easier to remember, but simpler identifiers are even better. Simple and meaningful identifiers are more likely to be used in manual parts of the workflow (like logging materials in or out of a holding area for processing).

3. Computer tools can facilitate tracking – or overcomplicate it

Spreadsheets or databases are a good way to keep tracking information in one place. On the other hand, they may not be accessible to everyone involved (or the project manager may not want them to be), for security reasons or access control (prevention of data loss or corruption due to simultaneous modifications.) Of the responders to the Sound Model RFQ, the two vendors rated highest in materials tracking stated that they used customizable databases (though their formats are of course proprietary.)

Consideration of these observations is essential when tracking materials. The Task Force also recommends creation of materials tracking spreadsheets such as the one created for the Sound Model Grant for each aggregated digital project (for an example see Appendix A: Sound Model Materials Tracking Sheet.) Other possible elements to include in these spreadsheets could be item name, digitization status, etc.

Section E: Scanning standards

i. Background

There are numerous publications that give similar "best practice" recommendations regarding scanning procedures for digital collection items. What follows is a synthesis of current principles and best practices gleaned from these sources: NEDCC's Handbook for Digital Projects: A Management Tool For Preservation and Access, NISO's A Framework of Guidance for Building Good Digital Collections, the Western States Digital Imaging Best Practices (Version 1.0) and CDP.

ii. Recommendations and best practices

1. General Principles

Western States Digital Standards Group lists the following general principles for scanning items.

- Scan at the highest resolution appropriate to the nature of the source material
- Scan once—at an appropriate level of quality to avoid rescanning and re-handling of the originals in the future
- Create and store a master image file that can be used to produce derivative image files and serve a variety of current and future user needs
- Scan an original or first generation (i.e., negative rather than print) of the source material to achieve the best quality image possible.

In addition to these general principles, many of the resources consulted recommended creation of three file versions of a digital image: a master image file, access image file, and thumbnail file. CDP describes the purpose of each file in the following way.

Purposes of the Master Image (stored in the TIFF format)

- Represents as closely as possible the information contained in the original image
- Uncompressed
- Unedited
- Serves as a long term source for derivative files
- Can serve as a surrogate for the original
- High quality
- Very large file size
- Used for creating high quality print reproductions

Purposes of the Access Image (stored in the JPEG format)

- Used in place of the master image for general web access
- Generally fits within viewing area of average monitor
- Reasonable file size for fast download time; does not require a fast network connection
- Acceptable quality for general research
- Compressed for speed of access

Purposes of the Thumbnail Image (stored in the GIF or JPEG formats)

- Designed to display quickly online; allows users to determine whether they want to view the access image
- Not always suitable for images consisting primarily of text, musical scores, etc; user cannot tell what content is at so small a scale.

Flatbed scanners and high end digital cameras are generally recommended for scanning projects. The use of drum scanners for scanning materials—especially fragile items—is highly discouraged.

2. Scanning Recommendations

Best Practices Scanning for Text Images

(Examples: Printed materials, photocopies, manuscripts and bitonal line drawings)

Master Files

File Format to Use: TIFF

Bit Depth: 1-bit bitonal, 8-bit grayscale, 24-bit color

Resolution: 600 ppi

Spatial Dimensions of Image: Scan at 100% of original

Access Files

File Format to Use: JPEG

Bit Depth: 1-bit bitonal, 8-bit grayscale, 24-bit color

Resolution: 150 dpi

Spatial Dimensions of Image: Scan at 600 pixels across the long dimension

Thumbnail Files

File Format to Use: JPEG or GIF

Bit Depth: 1-bit bitonal, 8-bit grayscale, 8-bit indexed color (GIF), 24-bit color

Resolution: 72 dpi

Spatial Dimensions of Image: Scan at 150 to 200 pixels across the long dimension

Best Practices Scanning for Photographic Images
(Examples: Black and white, color, sepia-toned photographs; negatives and slides)

Master Files

File Format to Use: TIFF

Bit Depth: 8-bit grayscale, 24-bit color

Resolution: 3000 to 5000 pixels across the long dimension

Spatial Dimensions of Image: Scan at 100% of image

Access Files

File Format to Use: JPEG

Bit Depth: 8 bit grayscale, 24 bit color

Resolution: 150 dpi

Spatial Dimensions of Image: Scan at 600 pixels across the long dimension

Thumbnail Files

File Format to Use: JPEG or GIF

Bit Depth: 8 bit grayscale, 8 bit indexed color (GIF), 24 bit color

Resolution: 72 dpi

Spatial Dimensions of Image: Scan at 100 to 200 pixels across the long dimension

Best Practices Scanning for Graphic Materials
(Examples: Line drawings, lithographs, watercolors and other artistic illustrations)

Master Files

File Format to Use: TIFF

Bit Depth: 8 bit grayscale, 24 bit color

Resolution: 3000 pixels across the long dimension

Spatial Dimensions of Image: Scan at 100% of original

Access Files

File Format to Use: JPEG

Bit Depth: 8 bit grayscale, 24 bit color

Resolution: 150 dpi

Spatial Dimensions of Image: 600 pixels across the long dimension

Thumbnail Files

File Format: JPEG or GIF

Bit Depth: 8 bit grayscale, 8 bit indexed color, 24 bit color

Resolution: 72 dpi

Spatial Dimension of Image: Scan at 150 to 200 pixels across the long dimension

Terms:

1-bit=2 shades (black or white)

8-bit grayscale= 256 shades of gray

8-bit color=256 colors

24-bit color=approx. 17 million colors (3 8-bit channels)

DPI=dots per inch

PPI = pixels per inch

Resolution= The number of dots or pixels used to represent an image

Sources: see **Scanning Guidelines by Source Type** Western States Digital Imaging Best Practices pp. 31-34, see also **Digital Imaging for Archival Preservation and Online Preservation: Best Practices**, MATRIX: The Center for Humane Arts Letters and Social Sciences Online at Michigan State University, 2001

3. Adjustments to Digital Images

After quality control review, adjustments to digital images can be made using software programs such as Adobe Photoshop CS2. Common adjustments to digital images include sharpening and evening of tonal values. (see Section F: Quality Control for a list of things to look for during visual inspection of scanned images)

Section F: Quality control

I. Background

All the institutions' websites visited recommended at least some form of quality control for digitization projects, but only some gave specific details about such a process, and there were a variety of practices listed. It was universally expected that, images that do not meet the chosen standards are to be re-scanned and not "doctored" in PhotoShop applications.

Websites consulted included: The American Heritage Center, University of Wyoming; New York University; Cornell; OCLC; NARA (National Archives and Records Administration); Western States Digital Standards Group; Reclaiming the Everglades (a joint project of the University of Miami, Florida International University Libraries, and the Historical Museum of Southern Florida); University of Florida (Digital Library Center at George A. Smathers Libraries); the Indiana University Digital Library; and, University of Southern Mississippi Libraries Digital Program. Findings from these sites are as follows:

The American Heritage Center uses the Western States Digital Imaging Best Practices Guide (with which CSU Libraries' Digital Unit already complies): [http://www.cdheritage.org/resource/scanning/documentsWSDIBP_v1 . pdf](http://www.cdheritage.org/resource/scanning/documentsWSDIBP_v1.pdf). These guidelines are well-defined and easy to follow and to quality assure.

The quality control workflow suggested by the WSDIBPG emphasizes that a QC program should be conducted throughout all phases of the digital conversion process. NARA, among others, recommends a quality control summary report of all quality control inspections performed.

The University of Southern Mississippi emphasizes that it is not only important to practice quality control on the digital objects themselves, but to also carefully proofread the metadata to catch errors and ensure that subject terms are assigned appropriately. NYU mentions that OCR should be scrutinized with nothing less than 100 percent accuracy (!) for scholarly works.

The University of Florida has its own Quality Control Unit to ensure the quality of digital products: visual, textual, and metadata. (They must have plenty of staff!) The University of Indiana suggests that all quality control be performed by people other than the staff doing the digitizing, since digitizing is such a habitual process.

The Reclaiming the Everglades project performs quality control by inspecting every thumbnail image and approximately 10 percent of the images in full-image view. With smaller collections, we would think that 100 percent of full-view images could be reviewed, but if the number is astronomical, then the 10 percent

approach is a good one. Laramie also abides by the 10 percent choice. WSDIBP suggests viewing images only at a 1:1 pixel ratio or at 100 percent magnification or higher (as does NARA), evaluating images both subjectively and objectively (using histograms, etc.). According to WSDIPB, a visual inspection may include the following:

- Image not the correct size
- Image not the correct resolution
- File name is incorrect
- File format is incorrect
- Image is in incorrect mode (i.e., color image has been scaled as grayscale)
- Loss of detail in highlight or shadows
- Overall too light or too dark
- Uneven tonal values or flare
- Lack of sharpness/excessive sharpening
- Pixellated
- Presence of digital artifacts
- Moire patterns
- Image not cropped
- Image not rotated or reversed
- Image skewed or not centered
- Incorrect color balance
- Image dull or no tonal variation
- Negative curve in the Look-Up Table
- Clipping black and white values (in histogram)

The University of Indiana practices a combination of automated *and* visual checks. They also point out that they utilize student workers in the early stages of the digitization process and that it is important to emphasize to them the importance of quality images and how to correct them early on in the process so as to avoid more problems that could compound later on. They also stress that a visual review certainly does find image quality problems that would not otherwise be found until an alert end-user report. They also place emphasis on the fact that automated checks are not enough on their own.

Reclaiming the Everglades:

<http://memory.loc.gov/ammem/award98/fmuhtml/build.html>)

University of Indiana:

<http://docserver.emeraldinsight.com/deliver/cs/mcb/1065075x/v21nl/s8/p40.htm?fmt=html>

New York University discusses the difference between quality control and quality assurance and maintains the importance of having quality control measures clearly defined before the onset of the digitization project. "Quality control includes the procedures and practices that you put in place to ensure the

consistency, integrity and reliability of the digitization process. Quality assurance refers to the procedures by which you check the quality of the final product."
<http://www.nyu.edu/its/humanities/ninchguideVIII/>.

Laramie suggests examining the histogram at the time of capture and creation of the master (.tif) file. This is not currently being performed by our Digital Unit. Should we incorporate it into our quality control procedures?

Digitizing audio and visual materials is a relatively new endeavor so there is little documentation on quality control practices. The Library of Congress' Audio-Visual Prototyping Project suggests the following for vendors who handle the digitizing of LOC audio materials:

- Complete item has been captured
- Re-recordings are not flawed by noise or distortion beyond that present in the source recordings
- All files open and play properly
- Re-recordings meet specifications for resolution, sampling frequency, and other formatting requirements
- Recorded calibration tone sets meet requirements for reproduction quality

ii. Recommendations

The Task Force recommends following the Western States digitization best practices as well as the use of the following form to insure quality control of digitized objects: ***Scanning Quality Control Checklist***

Scanning Quality Control Checklist*

		Name of file:		Comments	
	1	Image is the correct size			
	2	Image is the correct resolution			
	3	File name is correct			
	4	File format is correct (e.g., .tif, .jpg)			
	5	Image is in correct mode or bit depth (e.g., 8bit grayscale)			
	6	Image is not rotated or backwards			
	7	Image is not skewed or not centered			
	8	No lack of sharpness/no excessive sharpening			
	9	No Moire patterns (wavy lines or swirls)			
	10	No presence of digital artifacts (e.g., straight lines across image)			
	11	Not pixellated			
	12	No clipping black and white values (in histogram)			
	13	No uneven tonal values or flare			
	14	No loss of detail in highlight or shadows			
	15	No excessive noise (especially in dark areas or shadows)			
	16	Not too dark or too light overall			

***Visual evaluation of images shall be conducted while viewing the images at a 1 to 1 pixel ratio or 100% magnification on the monitor.**

Name

Date

Section G: Digital Watermarking and Other Image Security Techniques

i. Background

Image security techniques such as digital watermarking, fingerprints and signatures are a way to emphasize the proprietary ownership of collection materials, provide institutional authentication of digital images, and stop unauthorized use and publication. While there are no set best practices in this area, many sources reference digital watermarking as the image security technique used at their institution.

Different types of watermarks include:

Visible watermarks: Designed to be seen by viewers and clearly identify the owner of the image. They can be added onto a thumbnail or access copy of an image by randomly altering the brightness of pixels. Location of these watermarks can vary randomly to make them more resistant to tampering or alteration.

Invisible watermarks: Imperceptible under normal viewing, these marks often carry authentication and copyright information that can be embedded into images, usually without compromising or altering the image itself.

Watermarks can be fragile or robust. While fragile watermarks are designed to be "broken" under the slightest changes to the image (i.e., rescaling, compression, etc.), robust watermarks are designed to withstand alterations. It is important to note that **spatial watermarks** are embedded directly into an image's pixel data while **spectral watermarks** are incorporated into an image's transform coefficients (i.e., wavelet; low-level signal).

ii. Visible Watermarking at Morgan Library

According to Patty Rettig, two years worth of digital images from The International Poster Collection (1997 and 1999) originally had visible watermarks added to the access copies of the scanned items. However, upon review, these digital marks were removed as it was felt that their presence compromised viewing of the artistry of the posters and did not significantly increase image security for the collection.

Don Albrecht notes that additional experimenting with visible watermarking has been conducted in LTS by Dennis Ogg and Jennifer Kutzik, but has not been applied to any images in our digital collections.

iii. Visible Watermarking and Other "Image Rights" Options with CONTENTdm; Recommendations

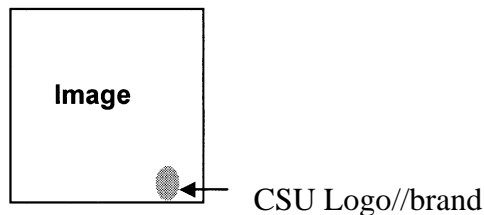
With CONTENTdm version 4.0 it is possible to add grayscale watermarks to the center of digital items. The opacity of such watermarks can be adjusted using a ratio button marked "watermark" (value range= minus100 to plus100). While this is a very easy way to create institutional identity for items, the center placement of the watermark tends to obscure the scanned image and compromise its visibility.

Other CONTENTdm image rights options—that are less intrusive to the image—are the following:

Banding: Displays a band of white or color with copyright text at the bottom of the scanned item



Branding: Allows the institution to display a logo or another identifying brand at the bottom corner of the item. The opacity and color of the logo can vary



As an interim measure for image rights protection, the Task Force recommends the use of less intrusive visible signatures--such as banding and branding--for digitization projects. It is also recommended that further investigation of *invisible* watermarks be conducted by CSU staff members.

see: **Protection—Watermarks, Fingerprints, Signatures** by Howard Besser and Andrea Richeson <http://www.sims.berkeley.edu/courses/is290-1/f96/watermark.html> and **Multimedia Security Research at Purdue University** <http://www.ece.purdue.edu/ace/water2/digwmk.html>
 see also: **CONTENTdm Website: Banding, Branding and Watermarking Images** at <http://contentdm.com/help3/acq-station/entering-data3.html> as well as Appendix A: CONTENTdm Help Sheet: Banding, Branding and Watermarking Images

Section H: Archiving practices for master files

i. Background

Because of the inherent fragility and impermanence of digital items—as well as continuing changes in electronic file formats and storage devices—archiving master files of digitized items poses a continuing challenge for institutions and repositories. The problem of archiving is two fold: Copying and storage considerations for master files of digitized images need to be addressed prior to the scanning of materials; after scanning, ongoing electronic file management needs to be practiced in order to insure archival preservation of the digital information contained in these files.

ii. Preliminary "best practice" copying, scanning, and storage recommendations to insure archival quality of master files

(see also: **Section E: Scanning standards**)

1. Scan and store master files in the TIFF (Tagged Image File Format) file format

NARA currently recommends using TIFF version 6, with Intel (Windows) byte order.

2. Uncompressed files are recommended—especially if not actively managed (i.e., stored on CD-ROM or DVD-ROM)

If files are managed in a digital repository, consider using either LZW or ZIP lossless compression for TIFF files. Do not use JPEG compression.

3. Store production master image files on hard drive systems, rather than optical media (CD-ROM)

Preliminary backup of images onto tapes from hard drives is also recommended. NARA uses CD-ROMs for distribution of images to external sources, not as a long-term storage medium.

4. If images are copied onto CD-ROM, use high end CD-ROM's such as Mitsui Gold Archive CD's

NARA recommends that two or more copies are made at the time of scanning, with one not handled and stored off-site.

iii. Ongoing electronic file management of master files

Ongoing management of master files of digital items is necessary due to constant changes and upgrades in hardware and operating systems, as well as the inherent fragility of the digital media. In an article entitled Digital Longevity, Howard Besser describes two commonly used approaches to active management, Refreshing and Migration.

- **Refreshing** involves periodically moving a file from one physical storage medium to another to avoid physical decay or obsolescence (for example, floppy disk to floppy disk, floppy disk to hard drive; CD ROM to DVD, CD ROM to flash drive, etc.)
- **Migration** involves periodically moving files from one file encoding format/software to another that is upgraded or useable with more modern computing equipment (for example: a file originally created in Microsoft WordPerfect to Word 3.0 to Word 5.0 to Word 97, etc.)

Emulation, which involves focusing on applications software rather than the files containing information, is another approach to active management of master files, still in its infancy. According to Besser, emulation backers work to build software that "mimics every type of application that has every been written for every type of file format" .

(see <http://www.gseis.ucla.edu/~howard/Papers/sfs-longevity.html>)

iv. Sources:

For more detailed descriptions of storing and archiving master files, see the following white papers and articles:

NARA Technical Guidelines for Digitizing Archival Materials for Electronic Access: Creation of Production Master Files—Raster Images (Record Types: Textual, Graphic Illustration, Artwork/Originals, Maps, Plans, Oversized, Photographs, Aerial Photographs and Objects/Artifacts), June 2004

GODORT (ALA Government Documents Roundtable) **Ad Hoc Committee on Digitization of Government Information Working Group 3 Report** December 14, 2001

California Digital Library, Digital Image Format Standards July, 2001

Western States Digital Standards Group: Digital Imaging Best Practices May, 2003

NISO Framework Advisory Group A Framework of Guidance for Building Good Digital Collections, 2nd Edition 2004

Section I: File naming conventions

i. Background

The Task Force found that there were no "best practices" recommended for this topic and a variety of local practices. For example, a scan of materials in CDP's Heritage Colorado show a variety of naming schemes, most of them numeric. Some are clearly accession numbers; others have no obvious ties to the materials identified. Some file names contain collection identifiers, some use collection identifiers as directory names, some do both.

There is a very good paper on the LC website, "Naming Conventions for Digital Resources" by Rebecca Guenther at <http://www.loc.gov/marc/naming.html> which reviews the early experiments by many of the big players in the library world on creating persistent naming schemes. It dates from 1995, so is rather old, but much of the information is still valuable.

The Library of Congress developed a two-tiered naming scheme using handles, a type of Uniform Resource Name (URN). The two tiers consist of an aggregate identifier that can relate either to a collection or a work, and an item identifier that relates to the particular physical piece, audio track, image, or other selection—the individual "thing" being digitized. The scheme was still in use as of 2001; it is outlined in the Digital Audio-Visual Prototyping project Statement of Work at <http://www.loc.gov/rr/mopic/avprot/audioSOW.html#7>. It is noteworthy that while the "handle" scheme was apparently still in use at LC at that time, it is not really useable for outside vendors; there is a related but separate naming scheme for vendor created files in the SOW. Also, many details as to how the "handle" scheme is implemented internally at LC are not given in the SOW; much naming information is simply provided to the vendors, with only a few hints as to how the information was derived.

More current information is difficult to find—as with tracking systems, most guides seem to run to the "make sure you devise a good naming scheme" sort of advice. The larger schemes discussed in the "Naming Conventions..." paper seem to have come to a standstill in development terms; most are likely waiting for standardization of URN-type naming, which still hasn't happened and is an issue not limited to the library/archival world.

ii. Common Elements

The following are the common elements in naming schemes at various institutions:

- An identifier for the institution (the "Naming Authority")

- Locally meaningful unique identifiers for collections and the items within them.
- A registry of items (this can be as simple as an Excel spreadsheet)

Many institutions noted that Item identifiers must be unique within a collection, but don't need to be unique across all collections. Different files can be identified by adding a "use mark"—for example, "m" for master, "a" for access, "t" for thumbnail.

iii. Recommendations

The most complete approach to file naming may be to:

1. Create a standard institution identifier for all projects

Example: mgn for Morgan Library

2. Establish unique identifiers for each collection Example: gst for Garst

3. Identify a unique identifier (numeric or text) that already exists on the pieces to be digitized and use that as the material tracking identifier.

4. Create file names by concatenating these three elements, plus a use mark for the type of file (master, access, or thumbnail)

Examples: **mgngst2m** (master file of second digitized item in a series), **mgngst2a** (access file of second digitized item in a series), **mgngst2t** (thumbnail file of second digitized item in a series).

5. Establish a registry of items

This can be greatly simplified. CONTENTdm manages digital objects by grouping them in collections, so a collection element isn't strictly necessary in the file name. Harvesters and multi-site servers usually maintain the link between a harvested object and the institution, so institution identifiers may not be necessary as well. This is sufficient as long as we can rely on these other applications to do what we expect, which is likely an acceptable risk.

Section J: Metadata standards

i. Metadata planning

Metadata planning is a creative, dynamic, and trial & error process, which may involve the following steps:

1. Investigate and understand the purpose, subject area, and audience (how they will look for information and what metadata, i.e., information about information, will help them in locating and evaluating the information they need) of the project.
2. Determine the level of description/access (for example, "book level", "chapter level", or "page level"), consult metadata elements as defined by the *Best Practices* and determine what elements are necessary for the project.
3. Investigate and understand how CONTENTdm (latest version: 4.0) works, especially how the system affects data input.
4. Draft metadata schema, including:
 - a. Local names for each element (the local names need to be intuitive, user-friendly, and precise in a way that they can be easily understood by users and will not cause multi-interpretations and confusions)
 - b. Data types for each element
 - c. Whether and if yes, what controlled vocabularies, thesauri, or data format will be applied to each element (for consistency and accuracy reasons)
5. Sample and review metadata schema:
 - a. Develop a pilot using samples
 - b. Consult public service librarian in the subject area for appropriateness
 - c. Review with the whole project team if necessary.
6. Finalize metadata schema.
7. If data input involves library technicians, develop metadata input procedure:
 - a. Identify and assign tasks
 - b. Establish a workflow

NISO - A Framework of Guidance for Building Good Digital Collections (2nd Edition, 2004) provides an inspiring section on questions to consider prior to metadata creation (see Appendix A) and lists valuable principles on what good metadata consists of (see Appendix B).

ii. Controlled vocabularies

"Attributes of distributed objects should be expressed according to standard controlled vocabularies when possible. These include, but are not limited to, personal names, corporate names, place names, subjects, and genre headings. Classification schemes, a form of controlled vocabulary that groups related resources into a hierarchical structure, can be useful in providing online subject access." (NISO - *A Framework of Guidance for Building Good Digital Collections (2nd Edition, 2004)*, p. 25)

The following factors need to be considered when choosing a controlled vocabulary:

- The metadata scheme chosen, the subject area of the collection, and if any local specific requirements exist.
- The audience of the digital collection. Are they specialists or generalists? What is their level of knowledge in the subject area? What languages do they speak? What other resources are they likely to use and what vocabularies are employed in those?
- Tools to support the use of the vocabulary. Is there an online thesaurus? Can it be incorporated into the collection's search system? Are there cross-references and related terms?
- Maintenance. New terms come into use, and old terms become archaic or obsolete. Who maintains the vocabulary, and how are updates issued?

At CSU Libraries, ***Library of Congress Subject Headings (LCSH)*** for subjects, ***Library of Congress Authority Files*** for personal, corporate, and place names, and ***Library of Congress Classification (LCC)*** for classification scheme are most often employed. However, there is no "one size for all" solution. The Metadata Librarians need to exercise their judgment according to the above-mentioned factors when choosing controlled vocabularies. Whatever vocabularies are chosen, their use should be documented in the project report.

The following resources are useful for selecting web-accessible controlled vocabularies:

- By subject area: *Controlled vocabularies, thesauri and classification systems available in the WWW. DC Subject* <<http://www.lub.lu.se/metadata/subject-help.html>, accessed November 10, 2005>
- By Alphabetical list: ***High-Level Thesaurus (HILT) Project Vocabulary Resources*** <<http://hilt.cdli.strath.ac.uk/Sources/vocabulary.html>, Phase I, accessed November 10, 2005>
<<http://hilt.cdli.strath.ac.uk/hilt2web/Sources/vocabulary.html>, Phase II, accessed November 10, 2005>

iii. Metadata Quality Control

Quality control exists in both schema quality and data quality. Schema quality is usually embedded in the metadata planning process. Data quality resides in two areas: completeness and accuracy. Based on the previous experiences and the examination of our resources, we recommend that a separate process of metadata quality control is unnecessary or unrealistic in our local environment. The reasons are as follows:

- Schema quality is embedded in the metadata planning process.
- Metadata creation is a creative, dynamic, and trial & error process on the professional level. Sometimes metadata are subject-oriented. These facts make it difficult to implement a standardized checklist for quality control. We assume that the Metadata Librarians will assure the completeness and accuracy in the metadata input process. If a library technician is involved in metadata input on the basic level, errors will usually be identified and corrected when higher-level data input is processed by the Metadata Librarian.
- We only have two metadata librarians. In most cases, only one metadata librarian will be responsible for a digitization project. When a library technician is involved in providing assistance in data input, a procedure is assumed to be in place to identify the responsibilities for each data field. These facts make it easy to track errors and trace responsibilities.
- Whether it is worth the effort for a Metadata Librarian to review another Metadata Librarian's metadata quality is a question: the scope of each project varies, and it can be time-consuming to investigate and understand a project's scope and rationale in order to obtain an understanding of the metadata schema and its controlled vocabularies and thus review the metadata successfully.

We suggest reporting errors and inappropriateness as discovered by users or other librarians and library staff directly to the metadata librarian who is responsible for the project as a quality improvement solution. However, the fact that we do not recommend a quality control process in our local environment does not mean that quality control of metadata in general is not necessary or not an established process. ***Improving the Quality of Metadata in Eprint Archives*** <<http://www.ariadne.ac.uk/issue38/guy/>, accessed November 10, 2005> provides a good discussion on this aspect. ***Metadata Quality Control Check List (revised 7/22/01)*** developed and used by National Park Services <<http://imgis.nps.gov/documents/QCchecklist.doc>, accessed November 10, 2005> provides an example of the existence of metadata quality control checklist. However, the nature and scope of their "metadata" is quite different from what we define and use in our local environment, since their data is much more specific and streamlined.

iv. Metadata preservation

Metadata loss is an unwanted situation in that metadata recovery is a time-consuming and human resource-consuming process. Metadata for digital objects are not only valuable for the present but also crucial for the future. Digital preservation for objects and metadata is an indispensable process for the success of sustainable digital projects.

At CSU Libraries, we used to take a double-end approach when CONTENTdm was initially installed, i.e., to create and store metadata in separate spreadsheets and later export to CONTENTdm. The drawback of this approach is the difficulty caused when data in a spreadsheet is edited: CONTENTdm does not allow partial upload of a specific set of data, thus any data change in a spreadsheet requires the whole data set to be uploaded. To avoid redundant data upload, data can be edited in a spreadsheet and in CONTENTdm separately; however, this is not a good way to assure data integrity.

This approach was taken in the earlier digitization projects such as International Posters and Garst Wild Life. As we acquired more familiarity with the CONTENTdm system, metadata was solely created and stored in CONTENTdm in the later digitization projects. LTS has a backup scheme for data and images in CONTENTdm, in which information is backed up daily on at least two servers and at planned intervals, the backed up information is transferred to disks and sent to the storage facilities in Denver as offsite backup for a period of three months until it is replaced by new backup.

We recommend that the current approach of creating and storing metadata solely in CONTENTdm and having LTS back up information regularly is sufficient for our current scope of projects and available resources. Digitization project managers are recommended to inform, consult LTS and secure a data backup plan prior to any actual data input for their digitization projects.

v. Best Practices

The metadata standards of local digitization projects will follow the ***Dublin Core Metadata Best Practices (Version 2.1 September 2005)*** <http://www.cdpheritage.org/cdp/documents/CDPDCMBP.pdf>, 65 pages, accessed November 09, 2005> developed by the *Metadata Working Group* of the ***Collaborative Digitization Program (CDP)***.

The Dublin Core record as developed by the CDP *Metadata Working Group* includes 18 elements, each of which is repeatable.

Ten mandatory elements include:

- **Title**
- **Creator (if available)**
- **Subject**
- **Description**
- **Date Digital**
- **Date Original (if applicable)**
- **Format**
- **Digitization Specifications**
- **Resource Identifier**
- **Rights Management**

The remaining eight elements are optional, but recommended to create richer, more complex records that increase the likelihood of database users' locating desired digital resources:

- **Publisher**
- **Contributor**
- **Type**
- **Source**
- **Language**
- **Relation**
- **Coverage**
- **Contributing institution**

For further descriptions and input guidelines of each element (p. 19-64), and practical considerations for implementing CDP Dublin Core (p. 9-13), please refer to the document. Members from CSU Libraries in the working group include:

Dawn Bastian
Nancy Chaffin
Tami Morse McGill

Metadata Librarians at CSU Libraries who will work on developing metadata for local digitization projects are:

Nancy Chaffin

Shu Liu

vi. Questions to consider prior to metadata creation

I. Purpose of the collection

- What are the goals and objectives for building this collection?

II. User needs & intended usage

- Who are the targeted users?
- What types of information do they need to know about the collection and the individual items?
- Are the materials to be accessed as a collection or will individual items be accessible?
- Will users need to have access to the source object and its digital counterpart?

III. Metadata standard section & usage

- Does the collection or its items have metadata before the digital collection is built? How useful are existing metadata for collection control, management, and access?
- What type of cultural heritage institutions will be involved in the project? What are the metadata standards that are used by organization in this domain? Which ones are most appropriate for this particular collection?
- What subject discipline will be involved? What are the metadata standards that are commonly used by users of this discipline?
- What is the format of the original resources?
- How rich of a description is needed and does the metadata need to convey hierarchical relationships?

How will you distinguish between the source object and the digital surrogate available on the web?

Source: ***NISO - A Framework of Guidance for Building Good Digital Collections (2nd Edition, 2004)***

<<http://www.niso.org/framework/Framework2.html>, accessed November 10, 2005, PDF file available for free download, 38 pages>, p. 20-21

vii. Metadata Principles

Metadata Principle 1. Good metadata should be appropriate to the materials in the collection, users of the collection, and intended, current, and likely future use of the digital objects.

Metadata Principle 2. Good metadata supports interoperability.

Metadata Principle 3. Good metadata uses authority control and content standards such as controlled vocabularies that are in line with user expectations to describe the content of objects and collocate related objects.

Metadata Principle 4. Good metadata includes a clear statement on the conditions and terms of use for the digital object.

Metadata Principle 5. Good metadata supports the long-term management of objects in the collections.

Metadata Principle 6. Good metadata records are objects themselves and therefore should have the qualities of good objects, including authority, authenticity, archivability, persistence, and unique identification.

Source: NISO - ***A Framework of Guidance for Building Good Digital Collections (2nd Edition, 2004)***

<<http://www.niso.org/framework/Framework2.html>, accessed November 10, 2005, PDF file available for free download, 38 pages>, p. 21-28

viii. Other documents of interest

ANSI/NISO: Data Dictionary—Technical Metadata for Digital Still Images (ANSI/NISO Z39.87-200X, ANSI/AIIM 20-200X, Ballot Period: July 18 – August 26, 2005)

<<http://www.niso.org/standards/resources/Z39-87-200x-forballot.pdf>, accessed November 14, 2005; source page:

<http://www.niso.org/standards/resources/downloads.cfm>, accessed November 14, 2005>

Data Dictionary for Preservation Metadata: Final Report of the PREMIS Working Group (May 2005)

<<http://www.ocic.org/research/projects/pmwg/premis-final.pdf>, access November 10, 2005>

ix. Digital collections at CSU Libraries

- ***Garst Wildlife***
<http://lib.colostate.edu/wildlife/>
<Metadata developed by student assistants, Nancy Chaffin refined>
- ***Germans from Russia***
<http://lib.colostate.edu/gfr/>
<Metadata developed by Nancy Chaffin>
- ***Colorado's Waters Digital Archive***
<http://lib.colostate.edu/archives/cowaters/>
<Metadata developed by Nancy Chaffin>
- ***International Posters***
<http://lib.colostate.edu/posters/>
<Metadata developed by Patty Rettig>
- ***CURC***
<http://lib.colostate.edu/curc/>
<Metadata developed by Dawn Bastian, with Lynn Jickling assisting data input>

Section K: CONTENTdm procedures

The following procedures for using CONTENTdm in creating local digital collections are current as of version 3.8. A major upgrade, version 4.0, has been released but not installed at CSU at the time of this writing. This version contains major changes in security, administration, and metadata editing, among other things. New policies and procedures may become necessary once the new version is installed (currently planned for late Dec.2005-Jan. 2006.)

i. Background

A CONTENTdm collection has two basic parts: the digital collection, which resides on the CONTENTdm server, and projects, which reside on individual Acquisition Station clients and are linked to the collection. At least one project must be created on any Acquisition Station instance that will be used to acquire digital objects or edit metadata for the collection.

CONTENTdm provides three levels of access to digital collections: systems administrator, collection administrator, and data entry. The systems administrator has access to all collections, and can perform high level functions such as creating collections and configuring security settings. Collection administrators are given access to one or more collections, and can edit certain collection-level settings, configure metadata fields, and edit metadata directly on the server through the Collection Administration menu. Collection administrators can also add and delete items from the collection. Data entry access performs all its functions through Acquisition Station, and can set up projects that are linked to permitted collections. Data entry access can acquire digital objects and enter or edit metadata. Objects and metadata are uploaded to a staging area, where they are approved and added to the collection by the collection administrator. Access level is set on the server side by the server administrator for each login (user ID and password.) A single login may have access to several collections. The Task Force recommends that we expand the level of access to CONTENTdm to include more than one system administrator.

ii. Collection Setup

When a digitization project is initiated, a request is made to the server administrator to set up a new CONTENTdm collection. The request must include the name of the collection, and a directory name of eight characters or less. If new logins need to be created, for new collection administrators or data entry people, the server administrator needs to know the new user IDs and passwords. (Note: each person needs only one login per server – not one login per collection. Collection access is set up by the server administrator for each login.)

At the current time, we use Samba shares to provide secure access from the Acquisition Station clients to the CONTENTdm server. Each collection has its own Samba share that creates a direct link to that collection directory. Every login involved with data entry or object acquisition, and every collection administrator needs rights to access this share. This must be part of the collection setup request to the server administrator. The share needs to be mapped to a network drive on each workstation used to upload or administer digital objects or metadata for the collection. Acquisition Station must be configured to upload files to the import directory on this drive.

Each collection administrator and every workstation used for data entry needs a copy of Acquisition Station. Special functions (JPEG2000 creation, for example) may have limited licenses; check the licensing status and make sure that special function versions are installed on workstations accessible to everyone who needs it.

Configure the metadata fields for the collection. CONTENTdm creates unqualified Dublin Core metadata fields as part of collection creation. These may or may not be sufficient for a particular digitization project. It is best to configure metadata before any objects are added to the collection, but not necessary; metadata fields can be added, deleted, or redefined at any time during the project, but some fields can be configured to enter data automatically when an object is acquired. Metadata configuration requires collection administrator access or higher.

iii. Acquisition Process for Simple Digital Objects

A simple digital object is one that consists of a single file: a photograph, a letter, a PDF file of a document, a single WAV file, etc. This is in contrast to a compound object, which contains several files grouped together and perhaps organized hierarchically. Compound objects require a different process for loading, which will be outlined later in this document. Most digital objects are simple objects.

This process, and the other acquisition processes given later in this document, assume the digital object already exists — the image has been scanned, transcripts have been created if desired, and access files have been generated from the master files. CONTENTdm will automatically generate thumbnail images at 72 dpi from image files, and has default thumbnails for other types of files. If these are not adequate (and the default thumbnails usually are not), custom thumbnails can be used. These must be generated outside CONTENTdm, like the access images are, and entered into CONTENTdm during acquisition or editing. Also, if metadata has been defined for the digital objects, it may be entered during acquisition. It may also be entered or edited later, after the object has been added to the collection. Digital object metadata is defined by the Metadata Librarian.

Digital objects are acquired using Acquisition Station. When a project is created and linked to a collection, a spreadsheet-like form is created in Acquisition Station, with each column corresponding to a metadata field in the collection fields list. To add an object, choose the menu option Acquire -> Import File, then select the file from the dialog box that opens. Once a file is selected, two windows are opened in CONTENTdm: a viewer (for images) or player (for sound) displaying the digital object, and a metadata entry form. A custom thumbnail may also be selected at this point, by clicking the "Custom Thumbnail" button on the metadata entry form.

Once all the available data has been entered, the user clicks the "Save" button on the metadata entry form. The object, its thumbnail and metadata will be added to the spreadsheet view. The object may be opened for additional editing by double-clicking on it. Digital objects subsequently acquired are also added to the spreadsheet.

Once all the objects are acquired and in the spreadsheet, the user clicks the "Upload" button in the spreadsheet view. This moves the digital objects to the staging area on the CONTENTdm server, where they are examined by a collection administrator, and added to the collection if approved. The collection administrator also builds a text index for the collection after each set of objects are added or edited; the text index makes the objects available to patrons and to other staff members working on the collection. The collection administrator can edit metadata or delete objects from the administration menu, but cannot add custom thumbnails or replace an object (if a more recent version is created, for example) from the administration menus. These two functions can only be performed from Acquisition Station.

iv. Acquisition Process for Compound Objects

Compound objects are digital objects that contain more than one file. Compound objects may have a hierarchical organization such as sections or chapters. They may also include searchable transcriptions of text. The text is associated with the digital object during the acquisition process.

Compound objects are composed of image files. There are four types of compound object: a postcard (an object made of two files, a front and a back), a picture cube (a six-sided object used to represent realia), a document (a multipage object with no hierarchy), and a monograph (a multipage object with a hierarchy of chapters or sections.) All the image files must be in one directory; if a monograph is to be created, the files must be arranged in subdirectories, one for each chapter. If transcripts are to be associated with the images, the text files must also be in a directory, but with no hierarchy even for a monograph. The transcript files must be in an eight-bit text format like ANSI, Latin Extended, or 8-bit Unicode, and have a .txt extension. Each transcript file must be named

exactly the same as its associated image file (except for the extension.) Also, to use transcript files, one metadata field must be configured by the collection administrator for full-text search. This is done in the field properties form from the Collection Administration menu.

Compound objects are acquired in Acquisition Station using the Batch Add process. To start this process, the user selects Acquire -> Batch Add, which opens a series of dialog boxes. The first dialog contains the option to create a compound object. Subsequent dialogs ask for the type of compound object, the image file directory, the compound object-level metadata, and page file naming options and page metadata. In particular, clicking the Advanced button on the page metadata dialog opens a form that allows configuration of some metadata fields for automatic data generation during acquisition.

Once all the dialogs are filled out, the user clicks the Upload button to create the compound object. The compound object is created (this can be very time-consuming) and added to the spreadsheet view. The object is uploaded, approved, and added to the collection using the same procedure as for simple compound objects.

v. JPEG2000 Objects and the Full Resolution Manager

JPEG2000 is a relatively newly developed file format that allows zoomable access, among other features. At this time, it's primarily used for detailed graphical objects like maps, where the detail is indiscernible at standard resolutions. JPEG2000 generation and viewing is an add-on feature of CONTENTdm. JPEG2000 access images are generated by CONTENTdm at the time an object is acquired; to do so requires the use of the Full Resolution Manager.

The primary purpose of the Full Resolution Manager is to record the location of the master files associated with digital objects in a CONTENTdm collection. To do this, instead of acquiring access objects as in the simple digital object process, users "acquire" the master file. The access object is created, and a copy of the master file is put in a staging area. The staging area is divided into volumes; the collection administrator configures their size, location, and naming convention. The intention is that the staged master files will be copied to a permanent storage location, such as a CD-R or archive drive. Note that master files are typically very large, so the staging area must have a large amount of free disk space; an error in copying a master file will abort the acquisition process.

JPEG2000 objects can be created for simple digital objects or compound objects. The files in a compound object must all be of the same format, so if JPEG2000 is desired for some images in a compound object, all the images must be created as JPEG2000. To configure a collection for JPEG2000 acquisition, select the

Tools -> Image Optimization menu option. This opens the Image Optimization dialog. Click the "Options" button and select the File Format tab. In the "File Type" dropdown, select "JPEG2000", then check the "Lossy compression" checkbox. We have used a compression ratio of 15:1 and gotten good results when detailed images are zoomed in closely. Click "OK", then "Save" (NOT "Close" – the "Close" button does not save settings.) When full resolution images are imported (simple digital objects or compound objects), the access images will be created in JPEG2000 format. Other formats can be used by returning to the Image Optimization dialog and selecting a different format in the "File Type" dropdown.

To create compound objects with JPEG2000 access images, the "Import images are full resolution" option must be activated. This option is available on the Full Resolution Settings dialog, the third dialog in the Batch Add process. Also select the option to "Auto generate display copies." File format settings can be checked at this point by clicking the "Advanced" button, which opens the Image Optimization dialog.

To create simple digital objects in JPEG2000 format, select the Full Resolution -> Import File menu option. The acquisition process is the same as for simple digital objects, except that the master file is selected rather than the pre-created access image. The JPEG2000 access image will be created silently when the file is saved to the spreadsheet view. There is no option to open the Image Optimization dialog and check settings during this process, so be sure to check the file settings before beginning.

Section L: User Accessibility to Collections

i. Background

In addition to the importance of proper descriptive metadata, how a digital collection is displayed and presented electronically plays a large part in successful user access to digital collections. While it is beyond the parameters of this task force to discuss best practices for web page design in great detail, the Task Force would like to mention several considerations that are important when planning the design, text, and display of digital collections in order to optimize user access.

Many sites fail to provide access to the widest range of users because they fail to take into consideration those visitors who

- have learning disabilities
- have visual and hearing impairments
- have mobility impairments which compromise speed of usage, dexterity, etc.
- speak English as a second language
- have slow internet connections or older monitors
- are new to using the internet or are unfamiliar with its protocols.

With this in mind, the task force recommends the following guidelines and considerations (sources: Web Accessibility Initiative and World Wide Web Consortium (WC3), **Web Content Accessibility Guidelines (WCAG) 2.0** <http://www.w3.org/TR/2005/WD-WCAG20-2--51123/complete.html> , Kristen L. Garlock and Sherry Piontek, **Designing Web Interfaces to Library Services and Resources** (ALA, 1999), and Martin R. Kalfatovic, **Creating a Winning Online Exhibition: A Guide for Libraries, Archives, and Museums** (ALA, 2002).

ii. General Recommendations and Considerations

1. Along with strong metadata descriptors for individual items, a recommended consideration for digital collections is to create a searchable, text-based, database of all items in the collection.
2. If digitized collections contain user forms, make sure to also include a telephone number and e-mail contact information, so that users have alternative means of contacting our institution. (see WCAG Guideline 2.5)
3. Make sure that background patterns and tiling does not interfere with text and digitized images. (see WCAG Guideline 1.4)

ii. Recommendations and Considerations Regarding Users with Disabilities

1. Text colors (including logos, link and visited link colors) should be of a hue that could be readable to color blind users.
2. Be aware of digital design elements—i.e., blinking or flashing images—that could cause seizures for users with epilepsy or high photosensitivity. (see WCAG Guideline 2.3)
3. Type fonts should be of a readable size; no smaller than 10-12 points. (see WCAG Guideline 3.1)
4. Descriptive text should be included with all digitized images in order to accommodate the screen-reading software that visual impaired users might have.
5. Whenever possible, provide transcriptions in conjunction with digitized audio collections to provide for the needs of hearing impaired users.
6. Allow for easier user navigation of sites by putting the most important information and links at the top of the page. (For visually-impaired users this is important as it will be noticed by screen-reading software.)
7. Location of navigation options should stay consistent from page to page. (see WCAG Guideline 3.2)

iii. Outline of WCAG Guidelines (2.0)

In addition to the recommendations and considerations outlined above, the Task Force also recommends reference to the World Wide Web Consortium's Web Content Accessibility Guidelines when creating web displays of digitized local collections. For easy reference, a brief outline of these guidelines follows:

Principle 1: Content must be perceivable

Guideline 1.1 Provide text alternatives for all non-text content

Guideline 1.2 Provide synchronized alternatives for multimedia

Guideline 1.3 Ensure that information, functionality, and structure can be separated from presentation

Guideline 1.4 Make it easy to distinguish foreground information from background images or sounds

Principle 2: Interface elements in the content must be operable

Guideline 2.1 Make all functionality operable via a keyboard interface

Guideline 2.2 Allow users to control time limits on their reading or interaction

Guideline 2.3 Allow users to avoid content that could cause seizures due to photosensitivity

Guideline 2.4 Provide mechanisms to help users find content, orient themselves within it, and navigate through it

Guideline 2.5 Help users avoid mistakes and make it easy to correct them

Principle 3: Content and controls must be understandable

Guideline 3.1 Make text content readable and understandable

Guideline 3.2 Make the placement and functionality of content predictable

Principle 4: Content must be robust enough to work with current and future technologies

Guideline 4.1 Use technologies according to specification

Guideline 4.2 Ensure that user interfaces are accessible or provide an accessible alternative(s)

Web Content Accessibility Guidelines 2.0:

<http://www.w3.org/TR/2005/WD-WCAG20-20051123/complete.html>

iv. WAVE 3.0 Accessibility Tool (Temple University/WebAIM)

Through the internet-based WAVE accessibility tool (sponsored by Temple University's Institute on Disabilities and Web Accessibility in Mind (WebAIM)), users and designers of digitized collections can evaluate the user accessibility of selected web pages through submission of the URL or downloading of the page. Pages are evaluated according to various formatting, textual, structural and semantic features that might compromise full accessibility to users or run contrary to WCAG Guidelines (version 1.0). Red icons denote errors on the page that WAVE recommends should be fixed, while yellow icons are alerts that may indicate possible errors.

This tool can be accessed at: <http://www.wave.webaim.org/index.jsp> See also Appendix A: **User accessibility to collections: WAVE 3.0 Accessibility Tool—Methods of using the WAVE; Explanations of icons**

M. E-metrics

i. Background

At the forefront of research and best practices recommendations on E-metrics--the statistical measure of usage of electronic resources (i.e., e-journals, databases, digital collections) and user success and satisfaction with these resources—is the Association of Research Libraries. In 2001, ARL's E-Metrics Project (part of the ARL Statistics and Measurement Committee) concluded a year long investigation into developing standards in this field including an overview of data collection practices at various institutions and a set of recommended statistics and measures.

Out of 19 total recommended statistical and performance measures, ARL Project Investigators recommended three under the category of Library Digitization Activities. They are as follows:

1. Cost of digital collection construction and management

Can include annual direct costs of personnel used to create digital materials and make items accessible to users (i. e., through creation of markup texts, metadata, copyright clearance, data storage, etc.), as well as direct cost of equipment, software and contracted services

2. Size of library digital collection *Can include number of local digital collections, size (in megabytes), and items*

3. Use of library digital collection

Can include number of times items have been accessed and number of searches conducted

Some of the criteria that ARL listed for these measures include:

- Definition of proposed statistic or performance measure
- Unit of measure
- Implementation of measure (including frequency of data collection, who collects the data, etc)
- Procedures for statistical collection (including forms for data collection)

ARL also emphasized that any library's assessment plan "will need to balance stakeholder needs with the availability of data and not seek perfection but look towards 'good enough' data that will support administrative decision-making in a

timely manner". The project group also suggested that libraries provide for the archiving and housing of data through forms and web intranets.

ii. Recommendations

When collecting usage statistics for digital collections, the Task Force recommends reference to ARL's measurement criteria as well as use of the following e-metrics statistics form: Annual Library Statistics of Online Local Collections.

iii. Sources:

Measures for Electronic Use: The ARL E-Metrics Project

[http://www.arl.org/stats/newmeas/emetrics/Blixrud IFLA.pdf](http://www.arl.org/stats/newmeas/emetrics/Blixrud%20IFLA.pdf)

Accessed October 30, 2005

See also <http://www.arl.org/stats/newmeas/emetrics/>

Colorado State University Libraries
Annual Library Statistics of Online Local Collections
(Please use a separate form for each digitized collection)

A. CSU Annual Statistics of Online Local Collections: GENERAL INFORMATION

Date _____ Collection Title _____

URL _____

Description of Collection _____

Was the Collection updated during the past year? _____

If so, what items were added or deleted? (If necessary, attach additional sheet to list)

Is this collection funded by a grant or consortium? _____

Statistics gathered by _____

Title, e-mail address and phone number _____

B. CSU Annual Statistics of Online Local Collections: STATISTICAL INFORMATION**a. Size and item count of digital collection****1. Size (in megabytes)****2. Number of digital items (Includes "born digital" materials as well as those converted from different formats)****b. Usage****1. Number of times collection items (unique files) have been accessed****2. Number of queries (searches) conducted****c. Collection construction cost and management (Use for new or updated collections)****1. Personnel costs and activities associated with costs (i.e., scanning, metadata creation)****2. Costs for equipment, software, or contracted services****3. Costs for upkeep and collection maintenance (i.e., migration, reformatting)**

N. Sale and licensing of images

i. Overview of Practices at CSU Libraries

There appear to be no best practices or standards regarding the sale and licensing of digital images, however, most institutions adopt a business model to handle this activity.

Generally, at CSU Libraries, the following procedure is in effect for sale and licensing of image and request control upon request for a copy of a digital image that is under copyright by CSU:

- 1.** After the image is scanned, The Assistant Dean for Digital and Collections Services determines unit cost.
- 2.** The Director of Accounting Services sets up the invoice and bills the party directly.
- 3.** A check is sent to Accounting Services and put in Miscellaneous Revenue.

It is important to note the importance of retention of a copy of the invoice in this procedure as it allows for tracking of payments, follow-up of payment reminders and turning the collection of cost over to the University if necessary.

The Colorado State University Research Foundation (CSURF) investigates intellectual property patents, copyright issues and marketability of products. In certain cases (i.e., images for the Caspar Collins map collection) CSURF also handles licensing and billing for the image.

ii. Recommendation

The Task Force recommends investigation of a more streamlined and consistent approach to sales and licensing of digitized images so that all activities are done by a central source.

Part Three

VI. Appendices

Appendix A: Attachments

Project planning and management

- NDLP Project Planning Checklist (Library of Congress, National Digital Library Program)

Copyright and ownership of image

- Copyright Issues for Libraries When Digitizing Materials for the Web
- When U.S. Work Passes into the Public Domain
- Kluge Project, Grant of Permissions Letter and Form
- Copyright Statement Reference Models: Germans from Russia, Garst Wildlife, International Poster Collection, Water Resources Archive
- Missouri Digitization Planning Project—Copyright and Intellectual Property Issues

Tracking of materials in the process of digitization

- Sound Model Materials Tracking Spreadsheet (partial example)

User accessibility to collections

- Wave 3.0 Accessibility Tool—Methods of using the WAVE; Explanations of icons

Appendix B: Bibliography of Sources

Project planning and management

- NDLP Project Planning Checklist (Library of Congress, National Digital Library Program)

NDLP Project Planning Checklist

Library of Congress, National Digital Library Program

Last updated January 1997

This document outlines the production process for historical collections at the Library of Congress and reflects that institution's administrative structure and procedures. Not every collection requires all of the steps listed; some collections require additional steps not listed. In practice, many of the operations are carried out in parallel and not sequentially.

- I. Select a collection for digital conversion
 - A. Analyze Collection
 - Determine scope or extent of digitization (entire or subset?)
 - Assess status of custodial division processing and housing
 - Assess the status of access aids (degrees of completion, readiness, & format)
 - Assess best format, e.g. full text conversion, scanned page images
 - Assess the physical condition and readiness for scanning
 - Assess restrictions and copyright
 - B. Consensus on collection among custodial div, NDLP team, & Library admin.
- II. Plan the approach to digitization
 - A. Develop method and resource plans for collection preparation & digitization
 - 1. Develop plan for required processing by custodial division
 - 2. Develop preservation treatment plan
 - 3. Complete evaluation of physical condition with recommendations
 - 4. Determine formats for capture, archiving and presentation
 - 5. Determine physical size (number of characters, images) & special production requirements
 - B. Determine repository requirements
 - 1. Determine scheme for file name assignment
 - 2. Register aggregate name for collection
 - 3. Estimate required storage space for digital collection
 - 4. Update NDL forecast for storage
 - 5. Evaluate existing finding aids or bib records and develop plan for access aid
 - 6. Develop plan for framework
 - 7. Develop restriction plan & implementation (copyright, terms of gift, publicity and privacy)
 - a) Find and record restriction facts at collection level
 - (1) Search collection files, copyright records, exchange and gift records...
 - (2) Create a narrative "findings" statement
 - b) Find and record restriction facts at the item level
 - (1) Search item files, copyright records, exchange and gift records...
 - (2) Create fielded/tagged note in access aid
 - c) Draft proposal for actions to be taken prior to and at the "release" time

- (1) Pre-release: seek required permissions
 - (2) Pre-release: Add notices to all restricted items
 - (3) Release-time: provide only local or licensed-site access for restricted items
 - (4) Release-time: provide no access to items restricted until a given date
 - d) Draft restriction statement to accompany online collection
 - e) Review copyright restrictions
 - (1) Review facts
 - (2) Draft proposal for actions
 - (3) Draft restriction statements with advisors in Copyright Office
 - (4) Forward findings, action proposal and draft restriction statements to General Counsel for approval
 - (5) Revise action proposal and restriction statements after General Counsel review
 - f) Implement action plans
 - (1) Implement pre-release actions, e. g. , seek & obtain permissions
 - (2) Implement release-time actions; provide access to collection
 - o 8. Workplan for digitization and access aid complete
- III. Produce digital collection and access aid
 - o A. Process and house collection
 - o B. Implement preservation treatment plan
 - o C. Item Capture
 - 1. Preparation
 - a) Prepare targets
 - b) Prepare scanning instructions specific to collection
 - 2. Image Capture
 - a) Scan collection
 - b) Process scanned images
 - c) Review images for quality
 - d) Coordinate rework
 - e) Notify contractor of acceptance of images
 - 3. Archive images in repository
 - 4. Text Capture
 - a) Prepare keying instructions specific to collection or batch
 - b) Mark up and key text
 - c) Review completed text for quality
 - d) Coordinate rework
 - e) Process text into final form
 - 5. Archive text in repository
 - 6. Audio Capture
 - a) Create preservation and working copy
 - b) Determine sample rate and resolution
 - c) Select digital audio file format
 - d) Analyze storage requirements
 - e) Acquire temporary storage space
 - f) Perform analog to digital conversion
 - g) Edit digital files removing "dead air" at cue-up points
 - h) Perform quality review
 - (1) Inspect graphic waveforms for truncation and peak
 - (2) Audition percentage of sound files
 - 7. Video capture

- o D. Access Aid Development
 - 1. Modify existing finding aid
 - a) Develop keying instructions
 - b) Photocopy and mark up existing printed aid
 - c) Coordinate off site keying
 - d) Mark up according to EAD
 - e) Review finding aid for accuracy and completeness
 - 2. Create new finding aid
 - a) Verify final processing and arrangement of collection
 - b) Draft finding aid
 - c) Mark up according to EAD
 - d) Review finding aid for accuracy and completeness
 - 3. Item-level finding aid (Bib record-style)
 - a) Set up Minaret database and import item-level records
 - b) Upgrade preMARC or MARC records
 - c) Download available preMARC or MARC records
 - d) Add supplementary notes into Minaret records
 - 4. Incorporate basic-level links
 - 5. Add enhanced-access links or subject terms
 - 6. Prepare collection-level MARC record for future inclusion in MUMS
- o E. Access Aid Complete
- IV. Store in digital archive
 - o A. Store files in directories as specified by naming scheme
 - o B. Register items in URN handle-server (when in use)
 - o C. Deposit items in digital repository (when in use)
 - o D. All items stored
- V. Create Framework
 - o A. Draft framework components
 - o B. Review completed framework components
 - o C. Create mockup of HTML document
 - o D. HTML mockup approved
 - o E. Develop and insert hypertext links
 - o F. Coordinate search engine *link with ITS*
 - o G. Insert final links
 - o H. Add graphic enhancements to HTML pages
 - o I. Mount HTML pages on LCWEB server
 - o J. Review framework for accuracy and completeness
 - o K. Framework completed
- VI. Assemble digital collection
 - o A. Store access aids in directories as specified by naming scheme
 - o B. Register document-style access aids in URN handle-server(when in use)
 - o C. Deposit document-style access aids in digital repository(when in use)
 - o D. Generate indexes for related MARC records
 - o E. Generate indexes for textual items in collection
 - o F. Prepare customized scripts associated with searching indexes and displaying results
 - o G. Add relevant viewers to supported configuration for WWW access in reading rooms
 - o H. Assembly completed
- VII. Test and refine
 - o A. Review assembled collection for accuracy and completeness
 - o B. Test links
 - o C. Make any necessary changes

- o D. Testing completed
- VIII. Release Collection
 - o A. Move HTML pages to production area of LCWEB server
 - o B. Provide links to new collection from appropriate points in LCWEB structure
 - o C. Add collection-level MARC record with pointer in 856 field to MUMS
 - o D. Release digital collection to public
- IX. Update

Other American Memory Documents

American Memory Home Page
am 02-12-97

Copyright and ownership of image

- Copyright Issues for Libraries When Digitizing Materials for the Web
- When U.S. Work Passes into the Public Domain
- Kluge Project, Grant of Permissions Letter and Form
- Copyright Statement Reference Models: Germans from Russia, Garst Wildlife, International Poster Collection, Water Resources Archive
- Missouri Digitization Planning Project—Copyright and Intellectual Property Issues

Copyright Issues for Libraries When Digitizing Materials for the Web

When digitizing documents or other objects to be made available on the World Wide Web, a library first needs to determine whether the item is protected by copyright or whether it is in the public domain. If the material is protected by copyright, the library will need to obtain permission from the copyright owner before making the digitized copy available through the World Wide Web. If the item is in the public domain, the library does not need permission to digitize it and make it available.

To determine whether an item is protected by U.S. copyright law*, a library must find the answers to five questions:

1. **Is the item published or unpublished?**
2. **What year was it published, or if unpublished, what year was it created?**
3. **If published before 1989, does it have a notice of copyright (0 or the word Copyright or Copr.)?**
4. **If published between 1923 and 1963, was the copyright renewed before 1964 when renewal became automatic?**
5. **Is the author dead, and if so, in what year did he or she die?**

Based on the answers to the above questions, the item will fall under one of the following categories.

PUBLISHED

Published; 1922 or earlier; author dead or alive

In the public domain. No permission necessary.

Published without © notice before 1989

Probably in public domain. Works published without © before 1978 are definitely in the public domain. No permission necessary.

Published with a © notice between 1923-1963 and renewed, or published between 1964 and 1977

Will be protected by copyright until 95 years after date of publication. Get permission from current copyright owner.

Published with a © notice between 1923-1935 and NOT renewed

In the public domain. No permission necessary.

Published; 1978 - present; author dead or alive

Will be protected by copyright until 70 years after the death of the author, or for a corporate author, the shorter of 95 years from publication or 120 years from creation. [In the case of a previously unpublished work created between 1923 and 1977 that was subsequently published prior to December 31, 2002, the work will be protected by copyright until December 31, 2047 or until 70 years after the death of the author, whichever is longer.] Get permission from current copyright owner.

UNPUBLISHED

Unpublished; created in 1977 or earlier; author died prior to 1933

In the public domain. No permission necessary

Unpublished; created in 1977 or earlier; author died after 1933

Will be protected by copyright until 70 years after the death of the author. Get permission from current copyright owner.

Unpublished; created in 1977 or earlier; author alive

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<http://www.mlcnet.org/services/copylinks.php>

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WHEN U.S. WORKS PASS INTO THE PUBLIC DOMAIN

By Lolly Gasaway

University of North Carolina

Definition: A public domain work is a creative work that is not protected by copyright and which may be freely used by everyone. The reasons that the work is not protected include: (1) the term of copyright for the work has expired; (2) the author failed to satisfy statutory formalities-to perfect the copyright or (3) the work is a work of the U.S. Government.

DATE OF WORK	PROTECTED FROM	TERM
Created 1-1-78 Or after	When work is fixed in tangible medium of Expression	Life + 70 years ¹ (or if work of corporate authorship. the shorter of 95 years from publication, or 120 Years from creation ²
Published before 1923	In public domain	None
Published from 1923-63	When published with notice ³	28 years + could be Renewed for 47 years now extended by 20 years for a total renewal of 67 years. If not so renewed, now in public domain
Published from 1964-77	When published with notice	28 years for first term; now automatic extension of 67 years for second term
Created before 1-1-78 but not Published	1-1-78, the effective date of the 1976 Act which eliminated common law copyright	Life + 70 years or 12-31 2002, whichever is greater
Created before 1-1-78 but published between then and 12-31-2002	1-1-78, the effective Date of the 1976 act which eliminated common law copyright	Life + 70 years or 12-31- 2047 whichever is greater

- 1 Term of joint works is measured by life of the longest-lived author.
- 2 Works for hire, anonymous and pseudonymous works also have this term. 17 U.S.C. § 302(c).
- 3 Under the 1909 Act, works published without notice went into the public domain upon publication. Works published without notice between 1-1-78 and 3-1-89, effective date of the Berne Convention Implementation Act, retained copyright only if efforts to correct the accidental omission of notice was made within five years, such as by placing notice on unsold copies. 17 U.S.C. § 405. (Notes courtesy of Professor Tom Field, Franklin Pierce Law Center and Lolly Gasaway)

LOLLY GASAWAY Last updated 11-04-03

Chart may be freely duplicated or linked to for nonprofit purposes. No permission needed.

Please include web address on all reproductions of chart so recipients know where to find any updates.

[date]
[address]

Dear [artist]:

Having submitted your posters for past Colorado International Invitational Poster Exhibitions (CIIPes), you may be familiar with the International Poster Collection at *the Colorado State University* (CSU) Libraries. The collection has served as the archive of the CIIPe shows since 1991, maintaining one copy of each poster exhibited. The International Poster Collection now has over 1,400 posters, the majority of which have been digitized for presentation on the Internet. This digitization is permitted by the agreements that are part of the submission form all entrants have signed from 1995 on. The website, featuring both a poster database and an artist database, can be found at <http://lib.colostate.edu/posters>. We feel this is a valuable educational resource, making unique, important graphic arts resources available to the world.

The CSU Libraries has a significant interest in building our research collections related to contemporary international poster art. In 2000, we received a donation of nearly 1,300 posters, the majority of which were featured in *Graphis* poster annuals. The collection is the John W. Kluge Contemporary Art Poster Collection, named after the generous donor. We are intending to make this collection available on the Internet, in the same manner as International Poster Collection, to increase access to this wonderful educational resource. To do this, we need permission from the copyright holders of the posters.

We are requesting a nonexclusive right to digitize your poster(s) for Internet distribution for an unlimited term. Digitized versions will be made available via the Internet, for on-line and off-line educational use, with a copyright statement identifying your rights as copyright holder and the terms of the grant of permissions.

Please complete the attached permissions form, which includes a list of the posters we are seeking to digitize, and return it to us. Do not hesitate to contact us with your questions (email: prettig@manta.colostate.edu). Thank you for helping us make contemporary poster art available to an international audience.

Sincerely,

Patty Rettig
Archivist for Poster Collections

Enclosure

[date]

[address]

Dear [artist]:

The Colorado State University Libraries has received one or more of your posters through a recent gift donation. The gift of nearly 1,300 posters, now called the John W. Kluge Contemporary Art Poster Collection after its generous donor, was given to complement the Libraries' International Poster Collection. Mr. Kluge's collection was formed largely from entries to the *Graphis* poster annual during the 1980s and 1990s.

The Libraries feel this is a very valuable collection, and we would like to make it available to a broad audience. Our intent is to digitize the posters and make them available over the Internet in the same manner we used for the International Poster Collection (<http://lib.colostate.edu/posters>). To do this, we need permission from the copyright holders of the posters.

We are requesting a nonexclusive right to digitize your poster(s) for Internet distribution for an unlimited term. Digitized versions will be made available via the Internet, for on-line and off-line educational use, with a copyright statement identifying your rights as copyright holder and the terms of the grant of permissions.

Please complete the attached permissions form, which includes a list of the posters we are seeking to digitize, and return it to us. Do not hesitate to contact us with your questions (email: prettig@manta.colostate.edu). Thank you for helping us make contemporary poster art available to an international audience.

Sincerely,

Patty Rettig
Archivist for Poster Collections

Enclosure

The John W. Kluge Contemporary Art Poster Collection

Grant of Permissions Form

In reference to the poster(s) listed below:

Do you authorize that you are the copyright holder, or that you share the copyright with others?

Yes/ Shared / No

_____/_____/___ I. *[Artist]*, *[Title]*, *[(Year)]*.

If you are the copyright holder, please indicate if you will grant:

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- No rights given.

If the rights are shared with others and we may contact them, please indicate: Contact name and information:

If you are not the copyright holder and you know who is, please indicate:
Contact name and information:

Signature: _____

Printed name: _____

Date: _____

Please return by mail to: Kluge Project
Acquisitions Services-- Monographs
Colorado State University Libraries
Fort Collins, Colorado, USA 80523-1019

Germans from Russia

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Germans from Russia On the Trail to Colorado

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Fair Use Factors

a. The Purpose and Character of the Use

A commercial use is less likely to constitute “fair use” than an educational, non-profit use. The Copyright Law lists some specific purposes for which fair use may be applicable, namely, criticism, comment, news reporting, teaching (including reproducing multiple copies for classroom use), scholarship or research.

b. Nature of the Work

If a work is published, is factual or nonfiction based, or supports important educational objectives, the fair use exception is more likely to apply. If a work is unpublished, highly creative (e.g., art, music, novels, films, plays) and fictional, the fair use exception is less likely to apply.

c. Amount and Substantiality of Portion Used

The fair use exception is more likely to apply when a small portion of the work is taken. In contrast, taking the most important portion of the work reduces the likelihood of the fair use exception applying.

d. Effect On Potential market on value of the work.
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Mammals



Reptiles



Birds



Insects/
Arachnids



Aquatic

Contact Sari Keilman

Last updated: 01/19/05

URL: <http://lib.colostate.edu/wildlife/copyright.html>

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The fair use exception is more likely to apply when a small portion of the work is taken. In contrast, taking the most important portion of the work reduces the likelihood of the fair use exception applying.

d. Effect On Potential Market or Value of the Work

If the copying will replace the need to purchase the original, the fair use exception is less likely to apply.



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Reptiles



Birds



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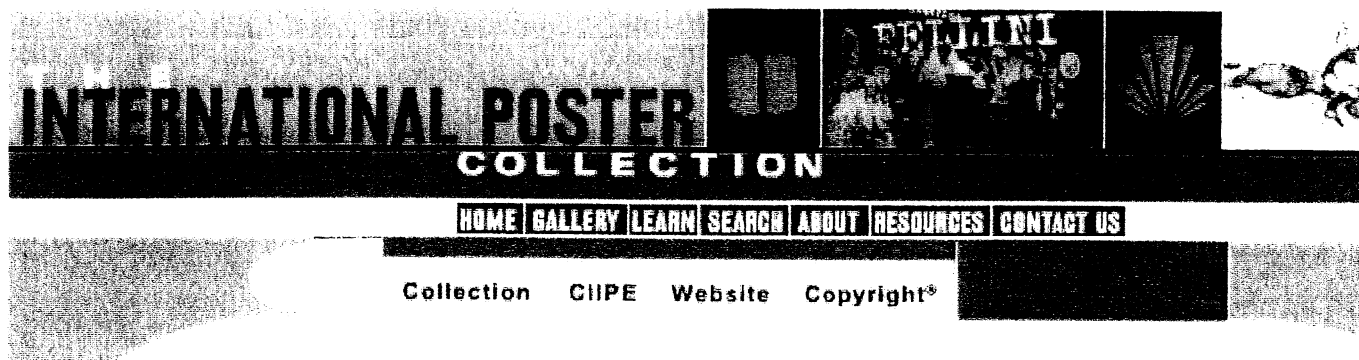


Aquatic

Contact Sari Keilman

Last updated: 04/01/04

URL: [http:// lib.colostate.edu/wildlife/fairuse.html](http://lib.colostate.edu/wildlife/fairuse.html)



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COPYRIGHT AND INTELLECTUAL PROPERTY ISSUES

Fall 2001

Copyright Working Group Members:

*Lynn Gentzler, Chair
Shelley Croteau
Brad Short
Pauline Testerman
Terry Anderson*

*State Historical Society of Missouri
Missouri State Archives
Washington University
Truman Presidential Library & Museum
Kansas City Public Library*

This document highlights concerns with copyright and other legal issues that arise when considering digitization projects. It is not intended as legal advice. Specific questions should be discussed with a qualified attorney. Among the topics addressed are copyright, deeds of gift, fair use, publicity and privacy rights, cultural property, and related issues.

Copyright refers to a bundle of rights given to the creator of a work to reproduce, prepare derivative works, distribute copies, and publicly perform or display his/her work. These rights apply to the creators of literary, dramatic, musical, artistic, and certain other intellectual works. Both published and unpublished works are protected. Ownership of a physical object, such as a book, manuscript, artwork, or sound recording, does not mean that the owner holds the copyright in that object. Detailed information about copyright is available on the U.S. Copyright Office web site:

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The principal law that affects copyright in the United States is the Copyright Act of 1976 and its subsequent amendments, which include the Digital Millennium Copyright Act of 1998 and the Sonny Bono Copyright Term Extension Act of 1998. [For a complete list of amendments, see <http://www.loc.gov/copyright/title17/92preface.html>.] The 1976 Copyright Act, and subsequent amendments, made a number of changes in existing copyright law, including the duration of copyright and the protection of unpublished as well as published works. Copyright now exists from the moment "original works of authorship" are "fixed in any tangible medium of expression." The text of U.S. copyright legislation, as embodied in Title 17 of the United States Code, can be found on the U.S. Copyright Office web site:

http://www.loc.gov/copyright/title_17/. Other sites that provide further information on the U.S. Copyright Law include:

American Library Association (ALA): <http://copyright.ala.org/basics.html>

Association of Research Libraries (ARI): <http://www.arl.org/info/frn/copy/dmea.html>.

Cultural institutions should be aware of the Uniform Computer Information Transactions Act (UCITA), which is uniform legislation which could be introduced at the state level "to regulate transactions in intangible goods such as computer software, online databases and other information products in digital form" (American Library Association, <http://www.ala.org/washoff/ucita/what.html>). For further information see:

American Library Association: <http://www.ala.org/washoff/ucita.html> Association of Research Libraries: <http://www.arl.org/info/frn/copy/ucitapg.html>.

Copyright legislation and related case law are evolving. Staff at cultural institutions undertaking digitization projects must keep abreast of the changes.

Published Works

The copyright issues surrounding published works are similar for digitizing as for reproducing any protected work. Digitizing materials is a form of publishing. The original format is being changed, but copyright laws still apply to the items. [A significant difference between reproducing copyrighted works by non-digital means and reproducing copyrighted works through digitization is found in section 108 where works reproduced by non-digital means are permitted to leave the library building, but works which are digitized under section 108 (b) or 108 (c) may not be distributed outside of the library premises.]

Works fall into the public domain when copyright laws no longer protect them. As a rule of thumb, works *published* before 1923 fall into the public domain. Works are protected by copyright whether or not they have been published. For more information about when published and unpublished works enter the public domain refer to charts prepared by Laura N. Gasaway, director of the law library and professor of law at the University of North Carolina, Chapel Hill: <http://www.unc.edu/~pqclng/public-d.htm>, and Peter B. Hirtle, co-director of the Cornell Institute for Digital Collections: <http://cidc.library.cornell.edu/copyright/default.htm>.

It is necessary to obtain permission from the copyright owner before digitizing works under copyright protection. Maintain and keep files that document the search for a copyright holder. A good faith attempt to find a copyright owner will be very important should an unintentional infringement occur. The following web sites may be of use if the copyright status of a work is unknown:

U.S. Copyright Office: <http://www.loc.gov/copyright.cirss>,

<http://www.loc.gov/copyright/resces.html>, and

<http://www.loc.gov/copyright/search/>

Association of Research Libraries: <http://www.arl.org/info/frn/copy/prirner.html>

University of Texas:

<http://www.utsystem.edu/OGC/IntellectualProperty/permisn.htm>.

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In general, when copyright interests subsist in unpublished manuscripts, these interests are the property of the author or of the author's heirs or assigns. Copyright ownership does *not* accompany physical ownership of a manuscript, although the owner of copyright interests may assign or sell such interests to the owner of the physical property. Manuscript materials present some of the most difficult ownership problems, especially if they belong to collections where the rights of the donor and the institution have not been clearly defined in a written agreement.

For the purpose of selecting a manuscript for digitization, the copyright question must be answered as early as possible. The U.S. Supreme Court applied a narrow view of fair use for unpublished materials in *Harper and Row v. The Nation* (1985) and *Salinger v. Random House* (1987). The Court decided that the old common law idea of the right of first publication takes precedence over fair use as defined in the 1976 law. In light of this limited interpretation, no digitization project should be undertaken without full understanding of ownership rights and with the full knowledge that permissions are essential before conversion of materials that are not in the public domain. Because permissions are often difficult to obtain, many institutions have avoided the copyright question by limiting their selections to collections that are in the public domain.

Visual Materials

The main concern in digitizing a photograph for availability on a web site is whether or not there is an identifiable photographer or other copyright owner. If there is, it is necessary to seek permission to place the photograph on a web site. If the copyright holder is unknown, evaluate the risk of making the picture available. Check with the photographer to determine if he/she has permission to distribute pictures of the subjects in the image. If there is no release form, consider contacting the subjects (because of privacy laws rather than copyright laws) and obtaining their permission to place the image on the web site. If the subjects are difficult to trace or are unknown, decide on the risk factor in digitizing the picture.

Permission must be obtained from the creator of an artwork, as well as the photographer of the work, before digitizing the image. Likewise, the copyright owner of a video or motion picture, usually the producer, must be contacted for permission prior to placing footage on a web site. All efforts to trace the subjects in photographs or copyright owners of visual materials should be well documented.

Sound Recordings

In general, copyright law as it applies to sound recordings is muddled. To compound the problem, no case law exists that would clarify these issues for institutions that might want to use commercially produced recordings on a web site.

There may, in fact, be two separate factors governing copyright infringement when it comes to delivering sound recordings on a web site. First, there is the rather obvious issue surrounding unauthorized digital reproduction and distribution of copyrighted music works and sound recordings. The second concerns the possibility of unauthorized public performances of copyrighted material. Delivering recordings over the Internet involves transmitting *both* the sound recording *and* the musical work embodied in the recording. As an example, the prevailing thought seems to extend the concept of "fair use" to the world of streaming media, or audio sound recordings in this case, when use of those materials are limited to students enrolled in a particular class for a particular period of time. For further information on copyright and sound recordings see:

U.S. Copyright Office: <http://www.loc.gov/copyright/title17/92chap11.html>

Music Library Association:

<http://www.musiclibraryassoc.org/Copyright/copyhome.htm>.

Deeds of Gift

Many materials that would be valuable to place on a web site are found in personal papers and manuscript collections. These materials often have limitations placed on their use. To be certain that specific materials can be digitized, refer to the deed of gift or consult the following Society of American Archivists web sites to develop such a document.

http://www.archivists.org/catalog/deed_of_gift.html

<http://www.archivists.org/catalog/donating-familyrecs.html>

<http://www.archivists.org/catalog/donating-orgrecs.html>

Fair Use

For all its problems, the fair use doctrine as set out in the copyright law seems to offer the most solace for nonprofit use of copyrighted materials on the Internet. The 1976 Copyright Act, section 107, provides for the fair use of copyrighted material without the permission of the author or owner of the copyright for the purposes of criticism, comment, news reporting, teaching, scholarship, or research. Specifically, the standards that govern fair use are the purpose and character of the use, the nature of the use, the amount being used, and the effect of that use on the market. These standards have nothing to do with whether or not a given item is still in print; that is a simple business decision and has no impact on copyright. For further information on fair use see:

U.S. Copyright Office: http://www.loc.gov/copyright/title17/92chap_1.html#107

U.S. Patent and Trademark Office. *Final Report to the Commissioner on the Conclusions of the Conference on Fair Use:*

<http://www.uspto.gov/web/offices/dcom/olia/confu/conturep.htm>

Stanford University Libraries. Copyright & Fair Use: <http://fairuse.stanford.edu/>

Association of Research Libraries. "Fair Use in the Electronic Age: Serving the Public Interest": <http://www.arl.org/info/frn/copy/fairuse.html>
Consortium for Educational Technology in University Systems (CETUS):
<http://www.cetus.org/fairindex.html>
Indiana University Copyright Management Center. Kenneth Crews and Dwayne Buttler's Fair Use Checklist: <http://www.iupui.edu/~copyinfo/fucheckintro.html>
Association of Research Libraries. Conference on Fair Use (CONFU):
<http://www.arl.org/info/frn/copy/confu.html>.

Publicity and Privacy Rights

Publicity is generally associated with public figures. Publicity rights address economic gain in one's name, likeness, voice, persona, or other aspect of personality. Unlike copyright law, there is no federal law regarding publicity rights. Laws vary from state to state, making it difficult to determine which law applies to which situation. In some states, this right continues after death. Tennessee, California, and New York have well-developed publicity rights laws. Because publicity rights address commercial rights, one may be able to make a case that these rights have not been encroached on if the use is noncommercial.

The right of privacy usually relates to private citizens rather than public figures. These rights are noncommercial and protect people from intrusion into their private affairs, from public disclosure of private information, and from being presented in a false light. The right of privacy generally ends with the death of an individual. For further information on privacy and publicity see:

The Center for Democracy and Technology:
http://www.edt.org/privacy/gore_analysis.980811.html
Library of Congress. American Memory. Privacy and Publicity Rights:
<http://memory.loc.gov/armmem/copotbr.html>
Northeast Document Conservation Center. *Handbook for Digital Projects: A Management Tool for Preservation and Access*: <http://www.nedcc.org/digital/V.htm>
Diane Vogt-O'Connor, "Digitization and Archival Information," *Cultural Resource Management*, National Park Service: http://crm.cr.nps.gov/archive/17-8/17_8-8.pdf.

Cultural Property

The Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) assigns rights and control of Native American cultural items, human remains, and funerary items to the originating tribe. Before digitizing an image of any of the above items, an institution must contact the proper tribe and gain permission to reproduce the item. The following links may be of use:

Bureau of Reclamation <http://www.usbr.gov/laws/nagpra.html>
National NAGPRA Database <http://www.cast.uark.edu/other/nps/nagpra/nagpra.html>
ArchNet web site http://archnet.uconn.edu/topical/crn/usdocs/nagpra_14.htm.

Related Issues

When hiring photographers to photograph artifacts or artworks make certain that the contract stipulates that the institution will own the copyright in the images. For further information on works made for hire see BitLaw web site: <http://www.bitlaw.com/copyright/ownership.html>.

Consider placing a copyright disclaimer notice on the web site with each item or collection. The notice can also include information about an institution's usage and reproduction policies. For examples see Library of Congress American Memory

<http://memory.loc.gov/ammem/award97/ohshtml/copyres.html>,

<http://memory.loc.gov/ammem/ndlpcoop/nhihtml/copyres.html>, and

<http://memory.loc.gov/ammem/award97/codhtml/copyres.html>.

Public institutions should develop a policy regarding external links. At least one lawsuit has been filed by a person who was denied a link from a city's web site to his personal web site. Linking to and framing materials on other web sites should be carefully done, with thought given to possible copyright infringement issues. Also, the Online Service Provider Limitation on Liability section of the Digital Millennium Copyright Act provides that a copyright owner may request a person or institution to remove links to pages which contain materials infringing on the copyright owner's exclusive rights.

Other topics that should be considered include whether or not to accept advertisements and accessibility of a web site under the Americans with Disabilities Act. For a good discussion of these issues see Shirley Duglin Kennedy, "Web Design that Won't Get You Into Trouble," *Computers in Libraries* 21(June 2001) <http://www.infotody.com/cilmag/jun01/kennedy.htm>.

Additional concerns include: 1) defamation, which embodies both libel and slander and holds the living up to contempt or derision; 2) obscenity and pornography; 3) sensitivity to content; and 4) the Freedom of Information Act, whereby the government must provide public access to certain records. Further information on these topics is available at Northeast Document Conservation Center.

Handbook for Digital Projects: A Management Tool for Preservation and Access:

<http://www.nedcc.org/digital/V.htm>.

Web Sites and Resources Related to Copyright and Other Legal Issues

The resources listed below contain information that will be of assistance to institutions confronting questions about copyright and other legal issues in establishing digitization projects.

Daniel A. Tysver, an intellectual property attorney, has created an extensive web site related to technology law at <http://www.bitlaw.com/>.

American Association of Museums. *A Museum Guide to Copyright and Trademark*. Washington, D.C.: American Association of Museums, 1999.

Colorado Digitization Project. <http://coloradodigital.coalliance.org/legalissues.html>.

Copyright Website. <<http://www.copyrightwebsite.com/>>.

Cornell Institute for Digital Collections. <<http://cidc.library.cornell.edu/>>.

Crews, Kenneth D. *Copyright Essentials for Librarians and Educators*. Chicago: American Library Association, 2000.

Fujita, Anne K. *The Great Internet Panic: How Digitization is Deforming Copyright Law*, 2 J. TECH. L. & POL'Y 1 (1996). <<http://journal.law.ufl.edu/~techlaw/2/fujita.html>>.

Indiana University-Purdue University Indianapolis (IUPUI). Copyright Management Center. <<http://www.iupui.edu/~copyinfo/aboutcmc.html>>.

Intellectual Property Law. <<http://www.intelproplaw.com/Copyright>>.

Michigan Library Consortium. Library Copyright Information - Links to Web Sites. <<http://mlc.lib.mi.us/sys/copyright/links.htm>>.

Sitts, Maxine K., ed. *Handbook for Digital Projects: A Management Tool for Preservation and Access*. Andover, Mass.: Northeast Document Conservation Center, 2000.

Tracking of materials in the process of digitization

- Sound Model Materials Tracking Spreadsheet

Sound Model Grant - Materials Tracking

Identifier	Title (Interviewee)	Length (hours)	Accepted	Collection	Permissions status	Piece Count
Pughe	Barbara Pughe	1.5	V	Extension Oral Histories	In hand	2
Brown	Bill Brown	1	Y	Cache la Poudre Heritage Corridor	TBD	1
Ruyle	Bob Ruyle	1	V	Cache a Poudre Heritage Corridor	TBD	1
Nelson	Burt Nelson	1	Y	Cache la Poudre Heritage Corridor	TBD	1
Stayer	Cecil Stayer	1.5	Y	Extension Oral Histories	In hand	2
Drage	Charles Drage	1.5	Y	Extension Oral Histories	In hand	2
Plumb	Charles Plumb	1.5	Y	Extension Oral Histories	In hand	2
Fithian	Chester Fithian	1.5	Y	Extension Oral Histories	in hand	2
Kesterson	Dale Kesterson	1	Y	Extension Oral Histories	In hand	1
Phau	Dale Phau	1.5	Y	Extension Oral Histories	Restricted?	2
Maxfield	Dick Maxfield	2	V	Cache la Poudre Heritage Corridor	TBD	2
Chadwick	Donald Chadwick	1.5	Y	Extension Oral Histories	In hand	2
Bice	Doris Atkinson Bice	1.5	Y	Cache la Poudre Heritage Corridor	TBD	2
Wilson	Doris Wilson	1	Y	Extension Oral Histories	In hand	1
Hogan	Everett Hogan	1.5	Y	Extension Oral Histories	In hand	2
Morey	Gene Morey	3	Y	Cache la Poudre Heritage Corridor	TBD	3
Varra	George Varra	1	Y	Cache la Poudre Heritage Corridor	TBD	1
GJohnson	Glen Johnson	1	Y	Cache la Poudre Heritage Corridor	TBD	1
Hobbs	Greg Hobbs	3	Y	Cache la Poudre Heritage Corridor	TBD	3
HJohnson	Harvey Johnson	12	Y	Water Supply and Storage	Need Jim Hansen's permission	12
Read	James Read	1.5	V	Extension Oral Histories	In hand	2
Stencel	John Stencel	2.5	Y	CSU History Oral Histories		3
Watts	Lowell Watts	1.5	V	Extension Oral Histories	In hand	2
Eckard	Melvin Eckard	1	Y	Extension Oral Histories	In hand	1
Rewerts	Milan Rewerts	1.5	Y	CSU History Oral Histories		2
Grigg	Neil Grigg	0.5	Y	Cache la Poudre Heritage Corridor	TBD	1
Evans	Norm Evans	1	Y	Cache la Poudre Heritage Corridor	TBD	1
Hamill	Robert Hamill	1	Y	Extension Oral Histories	In hand	1
Heil	Robert Hell	1.5	V	Extension Oral Histories	In hand	2
Steiben	Robert Steiben	2	Y	Cache la Poudre Heritage Corridor	TBD	2
Brady	Ronald Brady	1.5	V	Extension Oral Histories	In hand	2
Thaemert	Ronald L. Thaemert	1	V	Cache la Poudre Heritage Corridor	TBD	1

Total hours for digitization: 70

Total hours including "maybes" 87.75

Date _____

Transcript?

Date sent

received

Status

Notes

Copied

Copied

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No transcript?

No DoG?

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No DoG?

Digital watermarking and other image security techniques

- CONTENTdm Help Sheet—Banding, Branding and Watermarking Images



Topics

[Creating Projects](#)
[Acquiring Items](#)
[Entering Data](#)
[Generating Thumbnails](#)
[Editing Items](#)
[Archiving Images](#)
[JPEG2000](#)
[Uploading](#)
[Compound Object Creator](#)
[Building a Collection](#)
[About the Acquisition Station](#)
[Tutorials](#)
[Site Map](#)
[Glossary](#)
[Contact Us](#)
[User Support Center](#)

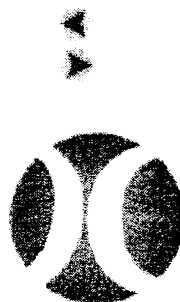
Banding, Branding, and Watermarking Images

Use the image rights options—banding, branding and watermarking—to display copyright information or indicate ownership of items in your collection.

Image Rights options must be configured before importing files. Only one of the three options can be applied at any one time during import. So for example, to use branding on some items and watermarking on others, import the items separately.

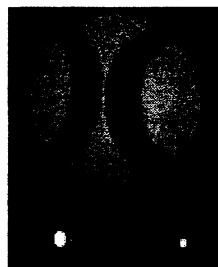
Use **banding** to display a band of color with copyright text at the bottom of your items. Use **branding** to display your logo or another image in the lower right hand corner of all your items. Use **watermarking** to display a selected grayscale image in the center of your items.

Banding uses only text. Branding and watermarking options require that you have an image on-hand that you wish to use. For watermarking functions only, CONTENTdm will interpret white as the transparency color, ignoring any white pixels in your logo. The following examples serve to illustrate what is meant by transparency. The logo below has a white background and is used as an example in the branding illustration. When the image is displayed as a brand, the white pixels are not visible.



CONTENTdm

In this second example, a logo with a black background would not have any transparency as a brand or watermark but would appear predominately black when placed over an image.



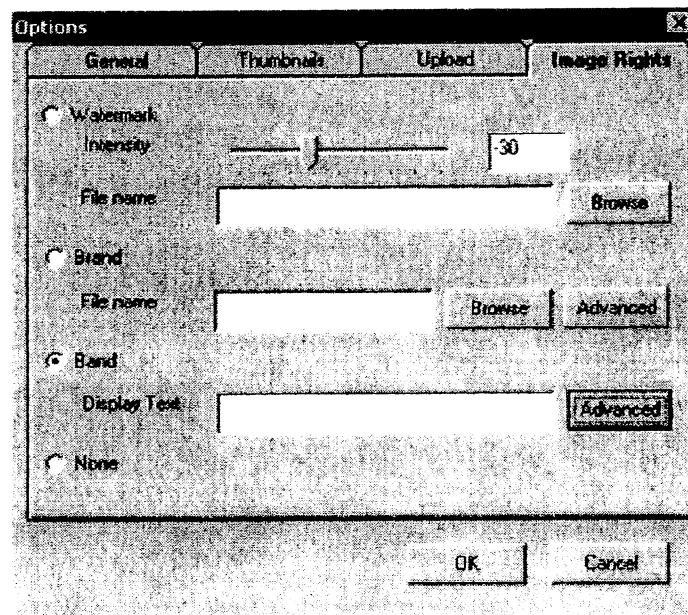
After establishing your image rights options, try importing a single item to evaluate your settings. If you are satisfied, import your items as usual. If you wish to make changes to the image rights settings, simply click **Options** from the **Edit** menu.

Note: Only image files of 8 bits per sample or less can be banded, branded, or watermarked. This function is not compatible with PDF, animated or transparent GIF, or MP3 files.

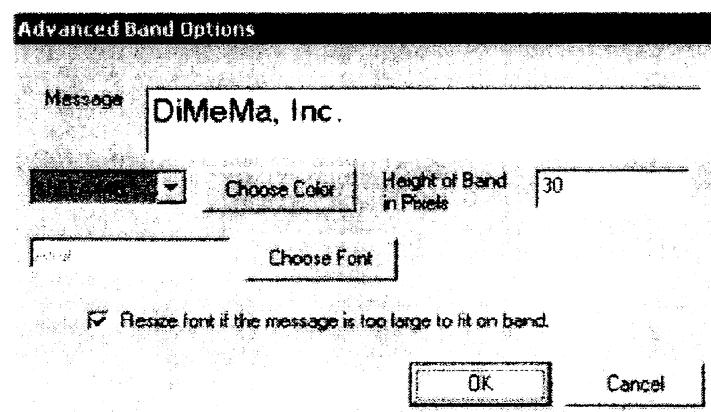
To band items:

Because **banding** uses only text you do not need a logo or graphic image to band items in your collection

1. Open a project and select Options from the Edit menu.
2. Select the Image Rights tab.

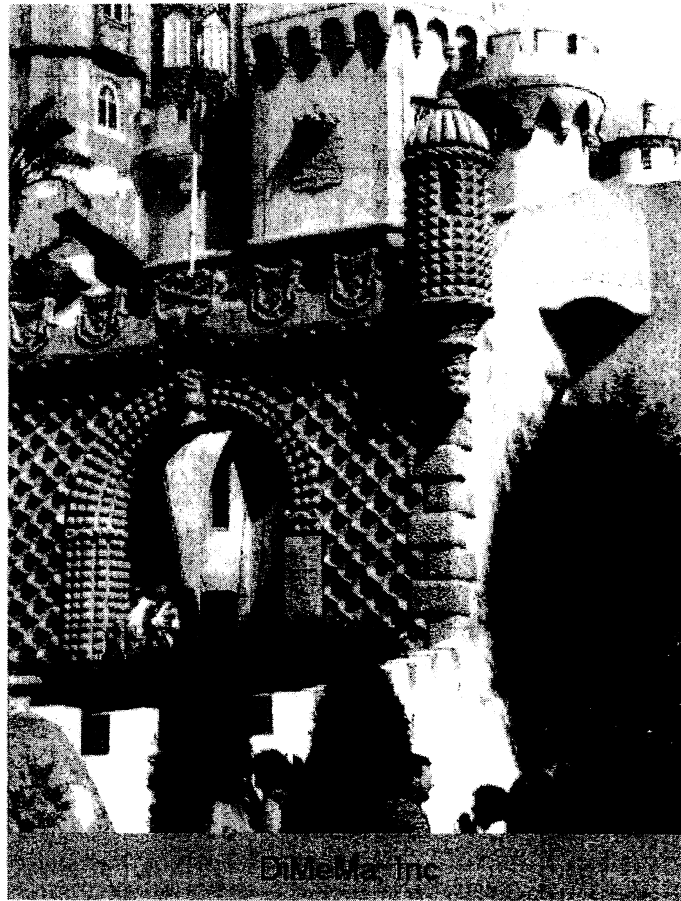


3. Select the radio button labeled **Band** then type the text you want to display in your band in the text box provided. To insert a text symbols, such as ©, create the symbol in another text program (Microsoft Word, for example) then copy and paste the symbol into the message text box.
4. Select **Advanced** to customize your band. If you do not customize your band, the default settings will display a gray band, 30 pixels high with your text in black, 14 point, Arial font.
5. To specify the band color click **Choose Color** then click on a color to select it. Click **OK**. The hexadecimal code of the color along with the color is displayed in the banding dialog box. Next, specify the height of your band in the text box next to Height of Band. Then click **Choose Font** to specify font color, type, and size. Click OK to close the Choose Font dialog box then click OK to exit the banding options dialog box.



6. Click **OK** to exit the Image Rights dialog box. All subsequent JPEG or TIFF images added to your project will have the band at the bottom.

Below is an example of a banded image. To turn off the banding feature, return to the Image Rights tab and select the radio button labeled **None**, click **OK** to exit.

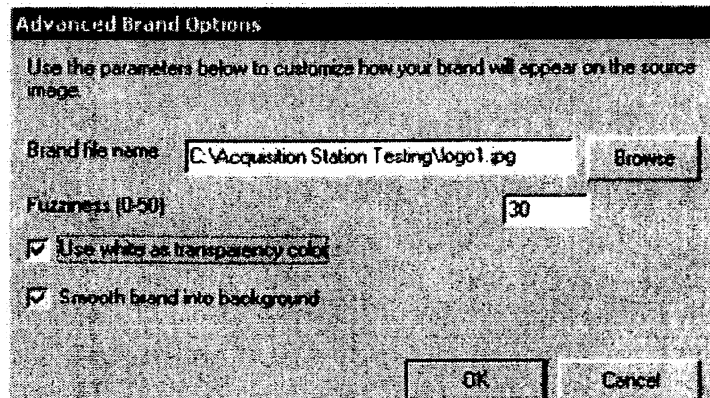
**To brand items:**

1. Open a project and select **Options** from the Edit menu.
2. Select the **Image Rights** tab.
3. Select the radio button labeled **Brand**.
4. Click **Browse**, locate the image to use for your brand. You may not use a brand with dimensions that are greater than the dimensions of the item you wish to brand. If the brand dimensions are greater than an item, a warning message is displayed and the item will not be imported into the Acquisition Station.
5. CONTENTdm provides rudimentary tools that allow you to change the appearance of the brand image, including fuzziness, transparency and smoothness.

If you do not wish to make any changes to the appearance of the brand, click **Browse**, locate the image to use for your brand, highlight the image, and click **Open**. Click **OK** to exit the Image Rights dialog.

To change how the brand will appear, click **Advanced**. Browse to the image if you have not already. Specify a value for fuzziness to make the brand appear sharper or blurrier (30 is the default value). To use white as a transparency color, select the check box next to that option. To smooth the edges of the

brand image into the background of your imported items, select the check box next to that option. Click **OK** to close the Advance dialog box. Click **OK** to exit the Image Rights dialog box. All subsequent JPEG or TIFF images added to your project will have the brand in the bottom right-hand corner.



In the example below, the fuzziness value is 30, white is treated as transparent, and the brand is smoothed into the background. To turn off branding at any time, return to the Image Rights tab and select the radio button labeled **None**, click **OK** to exit.



To watermark items:

1. Make certain your watermark is a grayscale JPEG image. CONTENTdm automatically resizes and centers the watermark to fit each of your imported

images.

2. Open a project and select Options from the Edit menu.
3. Select the **Image Rights** tab.
4. Select the radio button labeled **Watermark** and use the slider or enter a value for the opacity between -100 to 100. A negative opacity places a darker watermark, a positive value applies a lighter mark. For example, - 100 will yield a black watermark, +100 will yield a completely white watermark and an opacity of 0 will leave the image unchanged from its original value in the input file.
5. Enter the filename or browse to the file where your grayscale watermark image is located to select the image. Click **OK** to exit the Image Rights dialog box. All subsequent JPEG or TIFF images added to your project will have the watermark.

Below is an example of an image with a watermark applied to it. To turn off Watermarking at any time, return to the Image Rights tab and select the radio button labeled **None**, click **OK** to exit.






You may place a watermark on individual items after they have been imported into your project. To do this, double click on the image in your Project Spreadsheet. This will open the Media Editor. Select **Watermark** from the **Imaging menu** on the toolbar. Follow the steps outlined above and click **Save** in the Media Editor to keep your changes.

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User accessibility to collections




- Wave 3.0 Accessibility Tool—Methods of using the WAVE; Explanations of icons

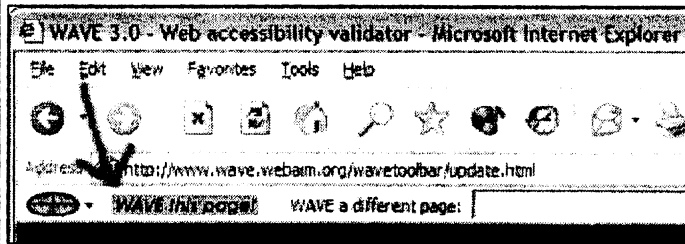
WAVE 3.0 Accessibility Tool	
 WAVE 3.0 Web Accessibility Tool	Methods of using the WAVE: <ul style="list-style-type: none">• Method 1: Submit the URI of a page• Method 2: Upload a page• Method 3: Install WAVE toolbar in browser• Method 4: Add WAVE bookmarklet to browser
WAVE 3.5 (development version) <p>See some of the upcoming features and ideas in WAVE 3.5. Feedback is welcome.</p> <p>Sponsored by:</p>  Temple University Institute on Disabilities	
Method 1. Submit Web Address <p>Enter the URI here (e.g. www.webaim.org):</p> <input type="text"/> <input type="button" value="Submit"/> Terms of use	Powered by:  WebAIM (Web Accessibility in Mind)
Current WAVE Preferences: <ol style="list-style-type: none">1. Standard to use:<ul style="list-style-type: none">✓ WAVE complete (includes WCAG 1.0, Section 508)2. Document mode:<ul style="list-style-type: none">✓ Standard (show all original images, tables, etc.)3. WAVE features to include:<ul style="list-style-type: none">✓ ALL <input type="button" value="Change Preferences"/>	In Memory of: <p>Len Kasday, whose ideas first brought this project to light.</p> <p>Info & Feedback</p> <ul style="list-style-type: none">• Explanation of WAVE
Method 2. Upload a page (graphics will not be loaded) <p>Enter local file location:</p> <input type="text"/>	

[Submit](#)[Terms of use](#)[Browse...](#)

Method 3. Install WAVE Toolbar in browser

When you install the WAVE toolbar in your browser, all you have to do is go to the Web page that you want to evaluate, then click on "WAVE this page!" or type in the Web address of the page you want to view, using the "WAVE a different page" field.

-  [Install Netscape toolbar](#)
-  [Install Internet Explorer toolbar](#)
-  [Install Mozilla toolbar](#)



Method 4. Add WAVE bookmarklet to browser

When you add the WAVE "bookmarklet" to your browser, all you have to do is go to the Web page that you want to evaluate, then click on the bookmarklet to process it through the WAVE.

[Install the WAVE bookmarklet.](#)

icons




- [About the WAVE](#)
- [Copyright and sponsor credits](#)
- [Terms of use](#)
- [Give feedback](#)
- [Request downloadable version & source code](#)
- [Privacy Policy](#)




Explanation of Icons Used in WAVE 3.0





Note: This document is a work in progress.



General Concepts

- All RED icons denote ERRORS(that should be fixed. (see note 1)
- All YELLOW icons are ALERTS that the author should check for possible errors.
- All GREEN icons are ACCESSIBILITY FEATURES that the author should check for accuracy.
- All LIGHT BLUE icons are STRUCTURAL, SEMANTIC or NAVIGATIONAL ELEMENTS that may aid accessibility, and which the author should check for accuracy.
- All OTHER COLORS denote FORMATTING or OTHER ELEMENTS





Images				
Icon Description	This icon appears where...	Recommended Actions	Required by WCAG 1.0	Required by Section 508
 ERROR: Missing alt text	alt text is not present in images, image map areas, or images used as form input elements	Supply accurate, adequately descriptive, and succinct alt text for all images, image map areas, and images used as form input elements.	✓ yes: P1: 1.1	✓ yes
 ERROR: Spacer image missing alt text	alt text is not present for images used as layout spacer elements	Supply null alt text (alt="").	✓ yes: P1: 1.1	✓ yes
 ALERT: Server-side image map	a server-side image map is present	<ul style="list-style-type: none"> • Convert it into a client-side image map OR • Create redundant text links elsewhere in the document that duplicate the functionality of the server-side image map 	✓ yes: P1: 1.2, 9.1	✓ yes

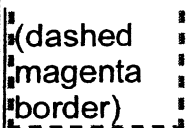
 ALERT: Suspicious alt text	the alt text: <ul style="list-style-type: none"> • is a file name (e.g. alt="photo.gif") OR • is a file size (e.g. alt="234 bytes") OR • includes one of the following words by itself: "image", "graphic", "photo", "photograph", "drawing", "painting", "artwork", "here", "click here", "click", or "more" OR • starts with "graphic of" or "image of" 	<ul style="list-style-type: none"> • Alter the alt text so that it is more descriptive and meaningful. • Do not inform the user that the object is an image or graphic, because assistive technologies already inform the user of that fact. 	✓ yes: P1: 1.1	✓ yes
 ALERT: Redundant alt text	an image has the same alt text as an adjacent piece of text (e.g. an image with alt="products" followed by the text "products")	Change either the alt text or the adjacent text so as to eliminate the redundancy. <ul style="list-style-type: none"> • You may be able to change the alt text to null, for example (alt=""), OR • Eliminate the adjacent text entirely so that only the alt text is present, OR • Alter the structure in other ways that are appropriate for the context. 	no	no
 ALERT: A nearby image has the same alt text	two images in a row have the same alt text	This may not be an error, depending on the context. If the images are right next to each other, you should probably change	no	no

		<p>the alt text of one of the images so as to eliminate the redundancy.</p> <ul style="list-style-type: none"> You may be able to change the alt text of one of the images to null, for example (alt=""), OR Eliminate the one of the graphics entirely, OR Alter the structure in other ways that are appropriate for the context. 		
 ALERT: Background images should NOT contain important content	a background image is present	<p>Ensure that no important content is included in the background image, because there is no way to make backgrounds accessible. If there is important content, consider creating an tag with the appropriate alt text.</p>	✓ inferred, but not explicitly identified	✓ inferred, but not explicitly identified
 ALERT: alt text too long; consider using longdesc	the alt text exceeds 150 characters	<ul style="list-style-type: none"> Shorten the alt text OR Provide a brief alt text PLUS a longdesc attribute, which links to a separate page containing the extended description 	✓ yes: P1: 1.1	no
 ACCESSIBILITY FEATURE: Alt text	the alt attribute is present in an image, image map or image used in a form element	<p>Ensure the alt text is accurate, adequately descriptive, and succinct.</p>	✓ yes: P1: 1.1	✓ yes
 ACCESSIBILITY FEATURE: Null alt text	the alt attribute is null, or empty (e.g. alt="")	<p>Ensure that this graphic does not convey any important information. If it does, give it appropriate alt text.</p>	not explicitly specified see P1: 1.1	not explicitly specified




 ACCESSIBILITY FEATURE: Long description	a longdesc attribute is present in an image [not yet implemented for other elements]	<ul style="list-style-type: none"> • Ensure that the long description is accurate, adequate, and succinct. • Ensure the link to the long description is functional 	✓ yes: P1: 1.1	no
 Client-side image map	a client-side image map is present	<ul style="list-style-type: none"> • Ensure that the image map AND the hot spots all have alt text • Ensure that the linearized reading order/ tab order of the hot spots is correct. 	✓ yes: P1: 1.1, 9.1, 1.5	✓ yes







Tables and Formatting







Icon Description	This Icon Appears Where...	Recommended Actions	Required by WCAG 1.0	Required by Section 508
 FORMATTING ELEMENT: Layout table	A table is present, but does <i>NOT</i> have any table headercells (<th>)	Ensure that the table is indeed only a layout table, and that it does not contain tabular data. If it contains tabular data, mark up the header cells appropriately (using <th> tags), and associate the data cells with the proper header cells.	✓ yes: P2: 3.3, 5.3, 5.4 P3: 10.3	no
 STRUCTURAL ELEMENT: Data table	A table is present and table header cells (<th>) <i>ARE</i> present	Ensure that the table is indeed a data table with tabular data, and that it is not used merely for layout. If it is only a layout table, eliminate all header cells (<th>).	✓ yes: P1: 5.1, 5.2 P3: 5.5, 5.6, 10.3	✓ yes
 STRUCTURAL ELEMENT: Table header	A table header cell (<th>) is present	Ensure that the cell is actually a header cell for tabular data. If it is not, change the <th> to <td>.	✓ yes P1: 5.1	✓ yes
				






 (dashed magenta border)	A <div> element is present	Make sure that the <div> tag encloses the proper areas.	✓ yes: P1: 6.1 P2: 3.3	no
➔ Linearized reading order	a new table cell or <div> tag begins	Ensure that the linearized reading order matches your intended reading order, and that the order would be logical if all of the layout tables and <div> tags were removed.	✓ yes: P2: 5.3	no

Structure and Semantics


Icon Description	This Icon Appears Where...	Recommended Actions	Required by WCAG 1.0	Required by Section 508
 ALERT: Possible heading	a paragraph appears to be used as a heading, but is not marked up as such (e.g. the paragraph is all bold, underlined or italic)	If the bold, italic, or underline tag is being used to simulate the look of a heading, eliminate that tag and replace it with the appropriate heading tag. Otherwise, consider using a CSS style instead to achieve the same effect.	✓ yes: P2: 3.5	no
 ALERT: Italic tag; use or CSS instead	the deprecated italic tag (<i>) is used	If the italic tag is being used to emphasize text, replace it with the emphasis tag (). Otherwise, consider using a CSS style instead to achieve the same effect.	✓ yes: P2: 11.2	no
 ALERT: Bold tag; use tag or CSS instead	the deprecated bold tag () is used	If the bold tag is being used to strongly emphasize text, replace it with the strong emphasis tag (). Otherwise, consider using a CSS style instead to achieve the same effect.	✓ yes: P2: 11.2	no





 ALERT: Marquee	the <marquee> tag is present	Eliminate the <marquee> tag	✓ yes: P1:7.1 P2: 7.3	no
 ALERT: Possible Blockquote	A paragraph has the appearance of being a quotation that should be marked up with <blockquote>	If the text in question is actually a quotation, use the <blockquote> tag to set it apart as such. Note: If the default rendering style (indented) is inappropriate for the context, apply a CSS style to customize the display.	✓ yes: P2: 3.7	no
 STRUCTURAL ELEMENT: Heading level 1	an <h1> tag is present	Ensure that the text in question is truly a heading and that it is at the top level of the outline hierarchy.	✓ yes: P2: 3.5	no
 STRUCTURAL ELEMENT: Heading level 2	an <h2> tag is present	Ensure that the text in question is truly a heading and that it is at the 2nd level of the outline hierarchy. Do not skip hierarchical levels. Note: If the default rendering style is inappropriate for the context, apply a CSS style to customize the display.	✓ yes: P2: 3.5	no
 STRUCTURAL ELEMENT: Heading level 3	an <h3> tag is present	Ensure that the text in question is truly a heading and that it is at the 3rd level of the outline hierarchy. Note: If the default rendering style is inappropriate for the context, apply a CSS style to customize the display.	✓ yes: P2: 3.5	no
 STRUCTURAL ELEMENT:	an <h4> tag is present	Ensure that the text in question is truly a heading and that it is at the 4th level of the outline	✓ yes: P2: 3.5	no





Heading level 4		hierarchy. Note: If the default rendering style is inappropriate for the context, apply a CSS style to customize the display.		
 STRUCTURAL ELEMENT: Heading level 5	an <h5> tag is present	Ensure that the text in question is truly a heading and that it is at the 5th level of the outline hierarchy. Note: If the default rendering style is inappropriate for the context, apply a CSS style to customize the display.	✓ yes: P2: 3.5	no
 STRUCTURAL ELEMENT: Heading level 6	an <h6> tag is present	Ensure that the text in question is truly a heading and that it is at the 6th level of the outline hierarchy. Note: If the default rendering style is inappropriate for the context, apply a CSS style to customize the display.	✓ yes: P2: 3.5	no
 SEMANTIC ELEMENT: Strongly emphasized text	a tag is present	Ensure that the text should be emphasized strongly. If not, remove the tag.	✓ yes: P2: 11.2	no
 SEMANTIC ELEMENT: Emphasized text	an tag is present	Ensure that the text should be emphasized. If not, remove the tag.	✓ yes: P2: 11.2	no
 STRUCTURAL ELEMENT: Ordered list	an ordered (numbered) list is present (the tag)	Ensure that an ordered (numbered) list is appropriate for the context.	✓ yes: P2: 3.6, 12.3	no
 STRUCTURAL	an unordered (bulleted) list is present (the 	Ensure that an unordered (bulleted) list is	✓ yes:	no

ELEMENT: Unordered list	tag)	appropriate for the context.	P2: 3.6, 12.3	
 STRUCTURAL ELEMENT: Definition list	an definition list is present (the <dl> tag)	Ensure that a definition list is appropriate for the context.	✓ yes: P2: 3.6	no
 SEMANTIC ELEMENT: Blockquote	a <blockquote> tag is present	Ensure that the text is truly a quotation. If not, remove the <blockquote> tag and apply a CSS style to achieve the same effect.	✓ yes: P2: 3.7	no
 SEMANTIC ELEMENT: Quote	a quote (<q>) tag is present	Ensure that the text is truly an inline quotation. If not, remove the <q> tag.	✓ yes: P2: 3.7	no
 Title	a title attribute is present	Ensure that the title is brief and informative. Titles can be added to any element, but are not required.	no	no
 STRUCTURAL ELEMENT: Client side image map	a client-side image map is present	Ensure that alternative text is provided for both the image AND the hot spots	✓ yes: P1: 1.1, 9.1, 1.5	✓ yes



Links and Navigational Shortcuts






Icon Description	This Icon Appears Where...	Recommended Actions	Required by WCAG 1.0	Required by Section 508
 ALERT: Mouse-over	a mouse-activated JavaScript event occurs in a link	<ul style="list-style-type: none"> If the mouse-over effect is only cosmetic (e.g. it causes an image to "glow" or to change color), no change is necessary. If the mouse-over effect exposes new content, this content will likely not be 	✓ yes: P1: 6.3 P2: 6.4, 7.3, 8.1, 9.2, 9.3	✓ yes

		<p>accessible to most assistive technologies.</p> <p>Provide a redundant, alternative way to access the same content or remove the mouse-over effect.</p> <ul style="list-style-type: none"> If the mouse-over is not available when using only the keyboard, consider using "onFocus" or some other method of making it available from the keyboard. <p>Note: It is usually acceptable to provide a redundant alternative as in the previous recommendation above.</p>		
 ALERT: Link to popup or another frame	a link is set to open a new window	<ul style="list-style-type: none"> Inform the user that the link will open a new window OR Cause the link to open in the same window 	✓ yes: P2: 10.1, 13.1, 13.4	no
 ALERT: link uninformative	links have text such as "click here", "here", "more", etc.	Reword the link so that it is more descriptive of its destination when read out of context of the rest of the document	✓ yes: P2: 13.1	no
 ACCESSIBILITY FEATURE / ALERT: Skip link for screen readers ONLY	an linked image is present which allows users to skip over sections of the Web content	<ul style="list-style-type: none"> If possible, remove the image and replace it with text instead. The text could say "skip to main content" or "skip navigation," for example. Ensure that the link is functional (e.g. that it is not broken) 	✓ yes: P3: 13.6	✓ yes
	an link is present which	Ensure that the link is	✓ yes:	✓ yes:



ACCESSIBILITY FEATURE: Skip link	allows users to skip over sections of the Web content	functional (e.g. that it is not broken)	P3: 13.6	
 NAVIGATIONAL ELEMENT: Same-page-link	a "same-page-link" is present, e.g. a link is set to jump to another location in the same document	Ensure that the link goes to a valid destination on the same page.	✓ yes: P3: 13.6	✓ yes
 NAVIGATIONAL ELEMENT: Link destination	the destination of a "same-page-link" is specified	Ensure that the destination matches its corresponding	✓ yes: P2: 13.6	✓ yes
 NAVIGATIONAL ELEMENT: Keyboard shortcut access key	an accesskey attribute is defined	Ensure that the accesskey does not conflict with any others on the page	✓ yes: P3: 9.5	no
 NAVIGATIONAL ELEMENT: tab order	a tab order attribute is specified	Ensure that the tab order specified is logical.	✓ yes: P3: 9.4	no


Forms

Icon Description	This Icon Appears Where...	Recommended Actions	Required by WCAG 1.0	Required by Section 508
 ERROR: Label missing	an form <input> or <textarea> tag does not have a corresponding label (Note: error icon will not appear if the input is hidden, an image, or a submit button)	Supply an appropriate label, using the <label> tag.	✓ yes: P2: 12.4	✓ yes
 ERROR: Fieldset without a legend	a fieldset is present, but the corresponding <legend> is missing	Supply an appropriate legend (which is akin to the label for <input> and <textarea> tags), using the <legend> tag.	✓ yes: P2: 12.4	(✓ yes)





 ERROR: Empty label	a form label is present, but it is empty	Supply an appropriate label within the <label> tag.	✓ yes: P2: 12.4	✓ yes
 ERROR: problem with form label	a form label is present, but it is not associated with any form <input> or <textarea> element	Associate the label with its corresponding <input> or <textarea> tag.	✓ yes: P2: 12.4	✓ yes
 ALERT: JavaScript jump menu	a JavaScript jump menu is present (e.g. a form input element that submits the form automatically when the user selects one of the options)	Eliminate the JavaScript jump menu because they are unfriendly to those who cannot use a mouse. Create a submit button to perform the same function.	✓ yes: P2: 6.4, 8.1, 9.3	✓ yes
 ACCESSIBILITY FEATURE: form label	a form label is present and associated with an <input> or <textarea> element	Ensure that the label is accurate, adequately descriptive, and succinct, and that it is associated with the correct <input> or <textarea> tag.	✓ yes: P2: 12.4	✓ yes
 ACCESSIBILITY FEATURE: fieldset/fieldset legend	a fieldset is present and has a corresponding <legend>	Ensure that the fieldset encloses the proper form elements and that the legend is accurate, adequately descriptive, and succinct.	✓ yes: P2: 12.4	(✓ yes)






Frames






Icon Description	This Icon Appears Where...	Recommended Actions	Required by WCAG 1.0	Required by Section 508
 ERROR: Frame missing title	a frame does not have a "title" attribute	Provide a frame title with one that clearly explains the purpose of the frame.	✓ yes: P1: 12.1, 12.2	✓ yes
 ALERT: Frame with suspicious title	a frame has a title such as: <ul style="list-style-type: none"> a file name (e.g. "frame1.gif") (other suspicious names) 	Replace the frame title with one that clearly explains the purpose of the frame.	✓ yes: P1: 12.1, 12.2	(✓ yes)



	a frame title is present	Ensure that the title is accurate, adequately descriptive, and succinct.	✓ yes: P1: 12.1, 12.2	✓ yes
ACCESSIBILITY FEATURE: Frame title				

Non-HTML Elements & Multimedia

Icon Description	This Icon Appears Where...	Recommended Actions	Required by WCAG 1.0	Required by Section 508
 ALERT: JavaScript element	a JavaScript element is present	Ensure that the JavaScript does not require the use of a mouse.	✓ yes: P1: 6.3, 8.1, 9.2, 9.3	✓ yes
 ALERT: Media element	an audio or video file is present	<ul style="list-style-type: none"> Ensure that captioning is provided for video content. Ensure that a transcript is provided for audio content. 	✓ yes: P1: 1.1, 1.3, 1.4	✓ yes
ALERT: Applet	an <applet> tag is present	<ul style="list-style-type: none"> Provide an alternative, HTML-based means of accessing the same functionality AND/ OR Use the Java accessibility API to create applets that are directly accessible 	✓ yes: P1: 6.3 P2: 6.4, 8.1, 9.2	✓ yes
 ALERT: Link to Word document	a link to a Word document is present	Provide an alternative, HTML-based means of accessing the same functionality	✓ yes: P1: 11.4 P2: 11.1	(✓ yes)
 ALERT: Link to Excel document	a link to an Excel document is present	Provide an alternative, HTML-based means of accessing the same functionality	✓ yes: P1: 11.4 P2: 11.1	(✓ yes)

 ALERT: Link to WordPerfect document	a link to a WordPerfect document is present	Provide an alternative, HTML-based means of accessing the same functionality	✓ yes: P1: 11.4 P2: 11.1	(✓ yes)
 ALERT: Link to PowerPoint document	a link to a PowerPoint document is present	Provide an alternative, HTML-based means of accessing the same functionality	✓ yes: P1: 11.4 P2: 11.1	(✓ yes)
 ALERT: Link to PDF Acrobat document	a link to a PDF document is present	<ul style="list-style-type: none"> • Provide an alternative, HTML-based means of accessing the same functionality AND/ OR • Create a tagged PDF file that is directly accessible to assistive technologies 	✓ yes: P1: 11.4 P2: 11.1	✓ yes
 ACCESSIBILITY FEATURE: Noscript tag	a <noscript> tag is present	Ensure that the noscript content allows access to the same functionality as the scripted content	✓ yes: P1: 6.3	✓ yes
 ALERT: Flash object	a Flash object is present	<ul style="list-style-type: none"> • Provide an HTML alternative (this is the most accessible option) • Create the Flash object using the accessibility features of Flash 6 or higher • Provide captions for any embedded video-type content • Consider placing a link before the Flash object, allowing users to either turn off the object, skip the object, or go to an alternative representation of the object • Ensure that the Flash object is 	✓ yes: P1: 6.3, 11.4	✓ yes

		keyboard-accessible		
 ALERT: Flash 6 object	a Flash 6 object is present	<ul style="list-style-type: none"> • Provide an HTML alternative (this is the most accessible option) • Create the Flash object using the accessibility features of Flash 6 or higher. • Provide captions for any embedded video-type content • Consider placing a link before the Flash object, allowing users to either turn off the object, skip the object, or go to an alternative representation of the object • Ensure that the Flash object is keyboard-accessible 	✓ yes: P1: 6.3, 11.4	✓ yes
	a Shockwave object is present	Provide an HTML alternative	P1: 6.3, 11.4	✓ yes
	an <object> is present which the WAVE could not identify	Provide an HTML alternative, if the object is not already in HTML format	P1: 6.3, 11.4	✓ yes
	The <embed> tag is present, without a corresponding <object> tag, OR the <object> tag is present without a corresponding <embed> tag	Although the <embed> tag is deprecated (outdated), media objects will not display in some older browsers without it (e.g. Netscape 4.x). The <object> tag is the current standard. You may consider using both tags if you have a sizeable audience that uses older browsers.	no	no
	a Quicktime movie is present	<ul style="list-style-type: none"> • Provide captions • Provide a text transcript • Provide audio descriptions, if necessary 	P1: 1.3, 1.4, 6.3, 11.4	✓ yes

	a Realplayer media object is present	<ul style="list-style-type: none">• Provide captions• Provide a text transcript• Provide audio descriptions, if necessary	P1: 1.3,1.4, 6.3, 11.4	✓ yes
	a Windows Media Player object is present	<ul style="list-style-type: none">• Provide captions• Provide a text transcript• Provide audio descriptions, if necessary	P1: 1.3,1.4, 6.3, 11.4	✓ yes

Appendix B: Bibliography of Sources

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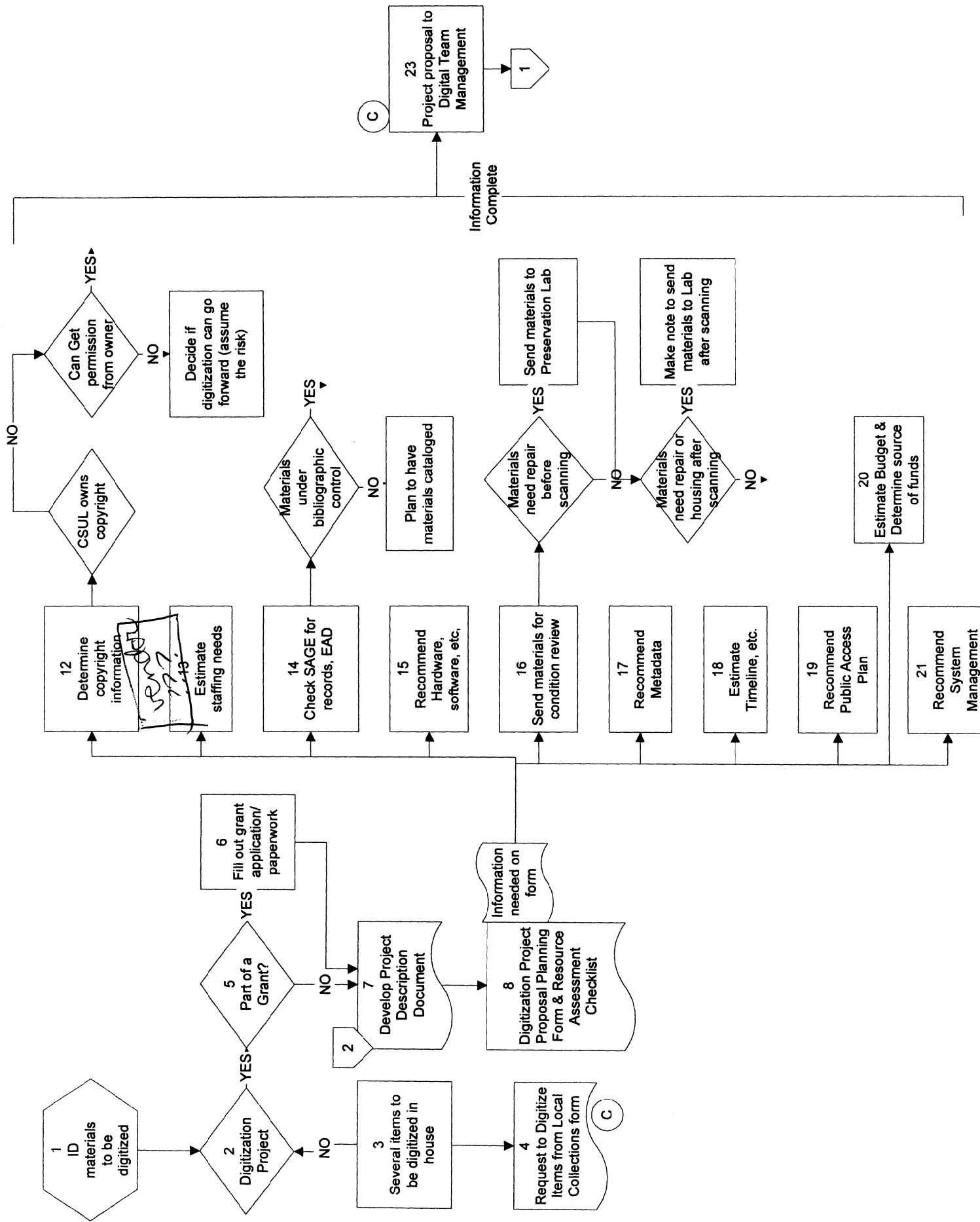
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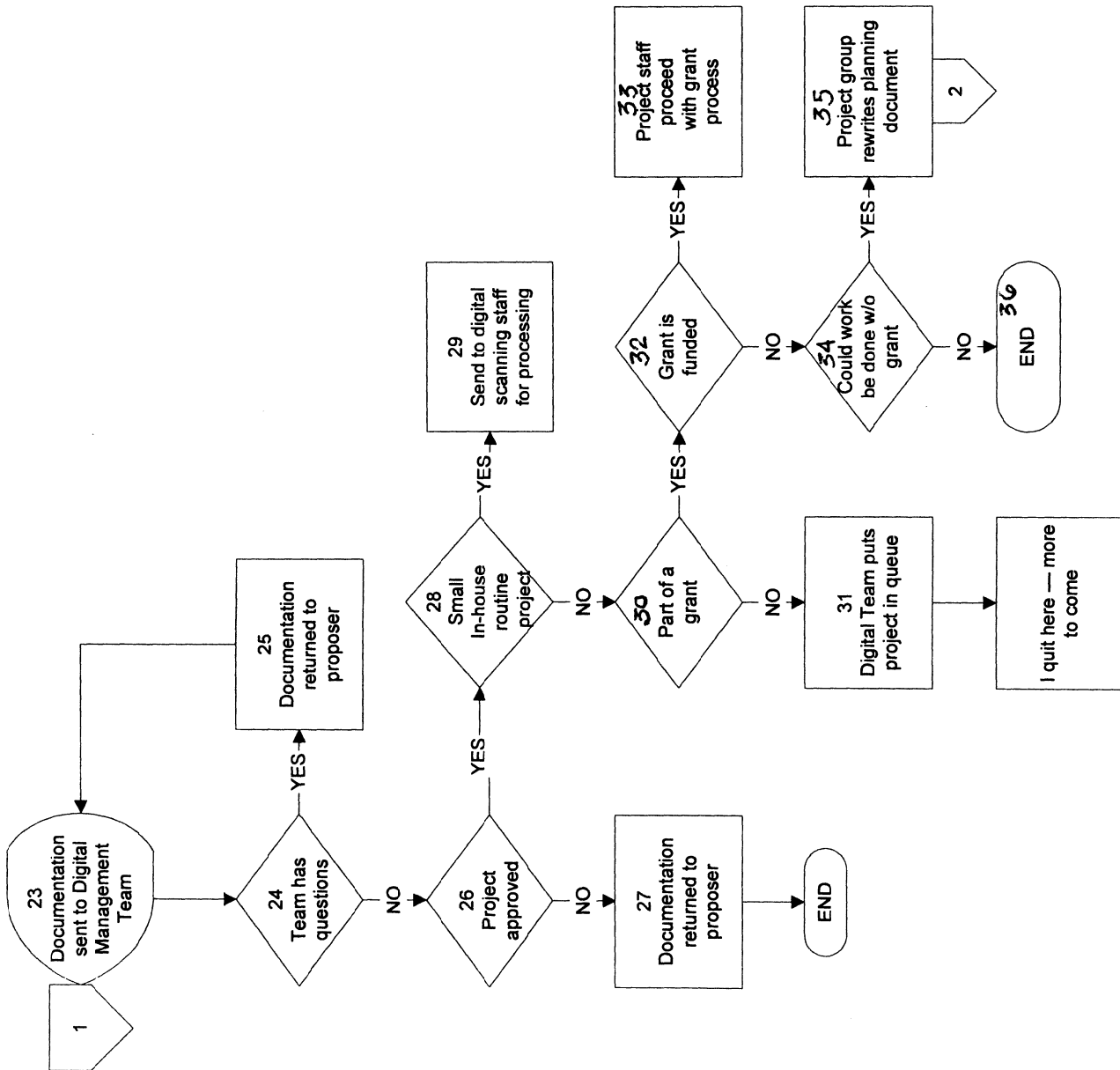
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Digitization of Local Collections Task Force -- Information to go with Flowchart

BOX	???	YES	NO	Description	WHO	Follow-up
1				ID materials to be digitized	Proposer	
2	???			Digitization Project		
3	2			NO Several items to be digitized in house		
4				Form -- Request to digitize	Proposer	
5	2	YES				
5	???			Part of a Grant		
6	5	YES		Fill out grant application	Proposer	
7	5		NO	Develop Project Description	Proposer	
8				DPP planning form	Proposer	
Work to fill out the form in Box 4 & 8						
12				Copyright	Acquisitions	
13				Staffing Needs		
14				Check for bibliographic control		Cataloging/SPEC
15				Hardware/software issues		
16				Condition review	Preservation	Preservation
17				Metadata		
18				Timeline, etc.		
19				Public Access Plan		
20				Budget & Funding		
21				System Management		
23				Proposal to Digital Team	Proposer	
24	???			Questions	Team	
25	24	YES		Return to proposer	Team	
26	24		NO			
26	???			Approved	Team	
27	26		NO	Return to proposer	Team	
28	26	YES				
28	???			Small inhouse project		
29	28	YES		Send to scanning staff	Team	
30	28		NO			
30	???			Part of grant		
31	30		NO	Project into queue	Team	
32	30	YES				
32	???			Grant is funded		
33	32	YES		Project staff proceeds	Proposer	
34	32		NO			
34	???			Can project be done without grant		
35	34	YES		Rewrite of planning documentation	Proposer	
36	34		NO	END		