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Jason Roy
Jane Wong
Minnesota Digital Library
Via email

I am pleased to submit my qualifications to the Minnesota Digital Library for consideration as a qualified vendor capable of digitizing historic assets for inclusion in *Minnesota Reflections*.

I have been working with historic images as a professional photographer and historian since 1978. I view each one as a treasure, with memories of someone "we knew," an event, or a place. Historic images and the written word are important legacies of who we are and how we became the society we are today.

My approach to digitizing is careful and exacting. My goal is to provide the BEST digital image possible based on consistently applied best practices, outstanding equipment and software, and a fully calibrated and color-managed system. These images, these documents, of our past deserve no less.

The supporting material below outlines my capabilities, quality control standards, and general digitization approach for the following materials and formats:

- Flatbed scanning up to 8.5 x 11 inches including photographs and other unbound materials, either continuous tone or bitonal
- Transparency and positive/negative scanning – flexible film including nitrate negatives, or glass plates – up to 8.5 x 11 inches including 35mm negatives and transparencies

I have a long and broad range of experience working with historic photographs and a solid understanding of digital workflows as a professional photographer. After working at the Iowa State Historic Preservation Office I formed a consulting company specializing in archival photographic services to libraries and historic preservation. Our clients included the Iowa State Historical Society and the National Park Service. All of my work was and is done to the archival photography standards of the Library of Congress.

On an ongoing basis I continue to work on digitizing my parent's and my spouse's parents photographs and the majority of my own images.

Most recently I have been working with the Northfield History Collaborative (Carleton College, City of Northfield, Northfield Historical Society, and Rice County Historical Society) on several projects including digitizing close to 300 postcards from the St. Olaf College Archives and identifying historic photographs (and scanning them) for the NHS Podcast project funded by the Minnesota Historical Society. I am also writing a best practices guide for digitizing historic images.

Thank you, I look forward to hearing from you and working with MDL!

Hans Muessig

General Approach to Digitization

I approach digitizing historic images with considerable care and thought. My goal is to accomplish two things: First, preserve and recover as much information from the images as possible, and: second, to produce a digital record that is "future proof" so that future patrons and researchers are able explore the image with tools and ask questions we cannot imagine now.[1]

One key to future proofing my work is to use a fully color managed system starting with a calibrated scanner and either Silverfast AI or Vuescan Pro with an IT8 reflective target. The monitor is color calibrated using a Spyder3 Pro spectrophotometer. This ensures that the digital color and density information is accurate, consistent, and comparable to other images scanned on other calibrated, color-managed systems. Users viewing the digital images on their own calibrated, color-managed systems can be confident they are seeing an accurate representation of the original.

Scanning of historic photographs, negatives, or transparencies is done at 24-bit color with an AdobeRGB color space. (If the holding institution requests, scanning can be done at 48-bit.) Resolution used is appropriate for the size and quality of the image. Postcards for example are scanned at 600 dpi unless they are detailed and sharp enough to be scanned at 1200 dpi (this additional resolution can be helpful in dating the photographs, e.g., from the movie posters visible in one postcard I scanned). All scanning is done to uncompressed TIFF files. A separation guide is included in the scan whenever possible.

Historic negatives – glass plates and nitrate negatives – present challenges for scanning because of their significant density – higher than modern films – and extended tonal range. In order to produce the highest quality scan I will frequently scan the image multiple times at different "exposures." These multiple scans are then combined to produce the final, high quality, digital file.

For flatbed scanning I use a guide to align the object to be scanned and mask off the unused portion of the scanner bed. Film items are held flat, if necessary, with a piece of anti-Newton glass. The scanning guide (and anti-Newton glass) significantly improves the sharpness and contrast of the scans, reduces scanner "flare," and simplifies subsequent image processing.

Immediately following a scan the image is opened in Photoshop and inspected in detail for quality.

All scanning for the Minnesota Digital Library would be done at 24-bits per the RFQ requirements. The holding institution would have a choice of delivery of the 24-bit Master digital files on Gold CD, Gold DVD, or portable hard drives. The file name standards in the RFQ will be followed and I provide printed "contact" sheets (small thumbnails, 12 to a sheet) of the images digitized labeled with file names.

Quality Control

The following steps are taken to ensure accurate scans:

1) Scanner and monitor are regularly color-calibrated to the AdobeRGB color space. Scanner is profiled using a reflective IT8.2 target and either Vuescan or Silverfast AI. Monitor is profiled and calibrated using a Spyder3 Pro spectrophotometer.
2) Scanner bed is cleaned with PEC-12 and PEC Pads to ensure it is clean.
3) Before each item is scanned, the item and scanner bed are brushed with a camel's hair brush.

[1] For example, in the 1980s I developed a standard for rock art documentation for the Department of the Interior, Bureau of Land Management that specified the use of Kodachrome film – for maximum archival stability – and the inclusion of a Macbeth (now xrite) Color Checker. This known color standard (24 squares) was and is significantly more accurate than the Kodak Separation Guides. Now researchers can produce accurate digital scans photographs taken thirty years ago of the rock art and assess any deterioration using xrite's new Passport software (just introduced).

4) Each item is aligned by a guide on the scanner bed that masks the unused portion of the scanner bed. The appropriate target is included in the scan. If the item allows, a small backing weight is placed on the item to ensure the item is flat against the scanner bed. Fragile, brittle items are held as flat as possible without damaging them. Negatives are mounted in a film carrier or held flat with a piece of anti-Newton glass.
5) A preview of the scan is examined for proper dynamic range, clipping, etc. and to ensure that the black and white points are properly set. The histogram is also inspected. If any defects are found the item is rescanned.
6) Once the final scan is completed, named correctly, and saved it is immediately opened in Photoshop for inspection at least 200%. I'm looking for the overall quality of the scan as well as dynamic range, black and white points, resolution, orientation, blocking of highlights or dark areas, dust, and color balance. I also check to see if the image warrants scanning at a higher resolution because of the detail it contains and do so if appropriate.
7) If the holding institution allows, the original (or its storage sleeve) may be marked in pencil with the image file name.
8) Backups are completed on a regular basis during scanning to ensure no data loss.
9) During any post-processing of the images, e.g., to add metadata to the image files, reduce the bit depth, or downsize the resolution of the images, each image is inspected again, often at 100 or 200 % of size to ensure accurate conversions.

Security and Handling

Security: All scanning is done at a dedicated workstation in my home office. Items from different holding institutions are stored separately in Light Impressions archival boxes. No food or drinks are allowed in the work area.

Handling: All items are handled appropriately; when necessary lint-free cotton gloves are used. Fragile items are not stacked on top of one another and items are kept in their protective envelopes and/or boxes when they are not being scanned. The scanning process itself is managed to minimize the handling of individual items, e.g., the front and backs of postcards (or other images with important notations on the verso) are scanned one after another. All scanning is done manually.

I pay particular attention to the condition of each item. The goal is to obtain the best scan possible without damaging the item. Some historic images – cyanotypes or albumen prints for example – can be on paper that has become brittle with time due to acids or other environmental or physical impacts (warping, folds, and creases). If I feel an item will be damaged by scanning I will propose a different approach using a digital camera to obtain a digital image.

Nitrate negatives present a number of challenges. Because of the danger of spontaneous combustion I either store them in airtight, explosion-proof containers, or loosely filed to allow sufficient air circulation to prevent the build-up of heat and decay products. Some nitrate negatives have considerable curl to them but can be easily flattened under an anti-Newton glass plate for scanning.

Experience

State Historical Society of Iowa: Consultation on historic image conservation and storage. Provided archival copy negatives of photographs and other items, duplicated their entire collection of nitrate negatives and glass plates on archival film and provided archival photographic prints of each item.

National Park Service, Department of the Interior: Photographic copies of several hundred historic photographs of all types and sizes as part of documentation projects for the Historic American Buildings Survey and the Historic American Engineering Record. All work completed to the standards of the Library of Congress.

Northfield History Collaborative: Digitizing historic postcards and other images held by the Northfield Historical Society and St. Olaf College.

Currently writing a “best practices guide” to scanning historic images and metadata guidelines for the Northfield History Collaborative from the perspective of a user of the images and as a professional photographer.

Scanning Services and Equipment Worksheets

Please identify the scanning services your firm is able to provide. All scanning services must bedone in accordance with the specifications addressed in this Request for Qualifications.

Standard Flatbed scanning (color & B/W) up to	_8.5_x_11_inches
Oversized scanning (color & B/W) up to	____x____inches
Color & B/W scanning of textual materials (bound) up to	____x____inches
Color & B/W scanning of textual materials (unbound) up to	_8.5_x_11_inches
Bitonal scanning of textual materials (bound) up to	____x____inches
Bitonal scanning of textual materials (unbound) up to	_8.5_x_11_inches
35mm slide transparencies	_X_ yes ___ no
Other film transparencies (negative and positive) up to	_8_x_10_inches

Audio conversion

Audio cassette	___ yes _X_ no
Reel-to-reel (any type)	___ yes _X_ no
Other sound recordings	___ yes _X_ no
List other supported types:	

Newspapers

Grayscale scanning of paper originals up to	____x____inches
Grayscale scanning from 35mm positive microfilm	___ yes _X_ no
Grayscale scanning from 35mm negative microfilm	___ yes _X_ no
Grayscale scanning from 16mm positive microfilm	___ yes _X_ no
Grayscale scanning from 16mm negative microfilm	___ yes _X_ no

Please note your ability to deliver to the MDL the digitized asset

Gold CD	_X_ yes ___ no
Gold DVD	_X_ yes ___ no
External Hard Drive	_X_ yes ___ no
SFTP	___ yes _X_ no

Please provide a comprehensive list of all hardware and software used in the digitization process.Identify which equipment will be used for each of the scanning services requested in this RFQ.

Hardware:

Computer:	Dell Studio XPS (2.8 gHz i7 processor), 4 GB memory, CD/DVD drive, 640 GB internal drive, several 300 GB and 1 TB external drives Dell 24" U2410 display Windows 7 Professional
Scanning Equipment:	Epson 1200U Epson V750-M Pro Nikon Coolscan IV
Printers:	HP DesignJet 6940 Epson Stylus Photo 2200

Software:

Scanning Software:	Lasersoft Silverfast AI NikonScan Hamrick Vuescan Pro
Image Management:	Adobe Bridge 4 ACDsee Pro 3.0
Image Editing:	Photoshop CS3
Color Management:	Datacolor Spyder3 Pro and Spyder3 Print

Other Peripherals:

Digital Tools:	IT8.2 reflective targets, Kodak Separation Guide, xrite (Macbeth) Color Checkers
Darkroom:	Full traditional darkroom capable of archival processing and printing negatives up to 4 x 5 inches and prints up to 16 x 20
Cameras:	Toyo and Sinar 4 x 5 view cameras, lenses from 65mm to 240 mm Nikon film and digital cameras and lenses including Nikon's renowned Micro (microfilm) lens, tripods, filters, light meters, etc.
Misc.:	Camel brushes, cotton gloves, lint-free cloths, archival film and print sleeves, Light Impressions storage boxes, color-balanced lighting, etc.

Firm Name

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Firm Address

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City, State, Zip

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Telephone Federal Identification Number

612 839-3265

Signature

Name and Title of Authorized Signer

Hans Muessig Principal

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