

Typical Workflow for Digitizing Fragile Historical Materials

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With this object type, there may be considerable variation in physical size, condition, and structure of the items to be digitized. “Fragile materials”, which in this context refers exclusively to print media, may denote single documents, ledgers or other collected volumes, architectural drawings, etc. The following workflow template is a guideline only, and time allocations may need to be adjusted significantly to accommodate tasks unique to a project (e.g., oversized items may require more transport time).

Activity	Personnel	Rate	Time (in hours)	Dates
Volunteer training (with an emphasis on handling)	Curator/Project Manager	2 days	14	
Transport to scanning station	Volunteers/Project Manager	Dependent on object size and scale of collection		
Scanning and file naming	Volunteers/Contractor	Varies based on scanning equipment and software		
Quality control checks ¹	Curator/Project Manager	Concurrent with scanning		
Storing digital objects and transport of physical objects	Curator/Project Manager	10% of total scanning hours	10	
Training volunteers in creating metadata	Curator/Project Manager	2 days	14	
Ingest of digital collection to platform and metadata entry	Volunteers	Depends on object; Approx. 1~10 minute(s) per item		
Linking collection to website, publicizing	Curator/Project Manager		10	

¹ With fragile materials, even gentle handling can cause abrasive damage. It’s possible that especially fragile items will only be able to physically withstand one round of scanning. Special care should therefore be paid to quality control of the preservation masters, as these digital surrogates will become the most stable base from which to create derivatives.

General Considerations

- Funding from BCHDP only covers the digitization process. As such, assessment of the fragile materials to determine whether they can be safely digitized, along with any other tasks related to selection, should **not** be included in your project workflow for this application. Conservation/preservation activities performed on the objects prior to digitization (also known as “stabilization”) are similarly ineligible for funding.

Suggested Equipment & Digitization Standards	
Recommended Standards	
Federal Agencies Digital Guidelines Initiative (FADGI): Technical Guidelines for Digitizing Cultural Heritage Materials - See pages 21-23 for Master and Access file format guidelines - See pages 23-26 for Physical Environment (i.e. lighting) guidelines - See pages 27-74 for examples of specific material guidelines - See pages 76-110 for guidelines on equipment, workflow, quality control, and storage recommendations Canadian Conservation Institute – Handling Heritage Objects Library of Congress – Recommended Formats Statement Note on Equipment: The Library of Congress cautions against the use of form feed equipment for fragile materials. If you need help assessing your collection for digitization prior to applying for BCHDP funding, this resource also provides a list of preservation considerations and criteria for omission: https://www.loc.gov/preservation/care/scan.html	
Equipment by Type	How Equipment Meets Recommended Standards
Imaging (Cameras & Scanners)	
Canon EOS 6D	Can capture in RAW format (best format for calibrating lighting in post-production)
Canon EOS 5 Mark II	Can capture in RAW format

Fuji GFX 50 MP DSLR	Can capture in RAW format
Atiz cradle scanner	Scanners with V-shaped cradles are best for bound materials (e.g., books) in order to prevent damage to the binding and/or the spine. The series of cradle scanners by Atiz are one popular example. Atiz book cradles work in tandem with 2 cameras of your choosing (examples listed above).
Epson Expression 10000XL flatbed scanner	Large flatbed area; Large size, can scan up to 48-bit and 4800 resolution (exceeds bit-depth and resolution recommendations by FADGI and ALA). Note that flatbed scanners may heat beyond 2 degrees Celsius.
Fujitsu fi-7700 scanner	Can scan up to 600 dpi (meets and exceeds recommendations by FADGI and ALA); capable of scanning delicate materials. Note that flatbed scanners may heat beyond 2 degrees Celsius.
Zeutschel OS 10000TT	Overhead scanner; preferred by FADGI over flatbed scanner; can scan at 36-bit (above 24-bit, which is recommended), and can scan at 300 ppi or 600 ppi.
Processing Software	
Adobe Lightroom (Lightroom app free on Apple & Android)	Can process Camera RAW format and can export 8-bit, 16-bit, and 32-bit TIFF images (master files) as well as JPEGs (access files). Note: Lightroom Classic can only export 8- or 16-bit TIFFs.
Adobe Photoshop (Lightroom + Photoshop bundle = 9.99/month)	Can process Camera RAW format and can export 8-bit, 16-bit, 24-bit, and 32-bit TIFF images as well as JPEGs (access files). Note: do not select JPEG compression for TIFFs as this is considered “lossy” and will reduce the image quality.
Dark Table (free)	Can work with Camera RAW format and can export 8- and 16-bit TIFFs (master files) and JPEGs (access files).
Irfanview (free)	Can read and save Camera RAW format and can export 32-bit TIFF images (master files) and JPEGs (access files). Note: downloading Irfanview 64-bit allows you to work with VERY large images (64-bit depth), not necessary for image processing (32-bit meets standards).

GIMP (free)	Can read Camera RAW format and can export 16-bit TIFF images (master files) and JPEGs (access files).
Temporary Storage	
Amazon S3	
Google Drive	
Microsoft OneDrive	