Glossary

Bit Depth - Bit depth quantifies how many unique colors are available in an image's color palette in terms of the number of 0's and 1's, or "bits." See also: Dynamic Range

Compression - The reduction of image file size for processing, storage, and transmission. The quality of the image may be affected by the compression techniques used and the level of compression applied.

There are two types of compression:
- Lossless compression is a process that reduces the storage space needed for an image file without loss of data. If an image has undergone lossless compression, it will be identical to the image before it was compressed.
- Lossy compression is another process that reduces the storage space needed for an image file, but it discards information. If an image that has undergone lossy compression is decompressed, it will differ from the image before it was compressed, even though the difference may be difficult for the human eye to detect.

There are both standard and nonstandard compression techniques available. In general, it is better to employ a compression technique that is supported by standards, is nonproprietary, and maintained over time. In selecting a compression technique, it is necessary to consider the attributes of the original. Some compression techniques are designed to compress text, others are designed to compress pictures.

Derivative, Surrogate or Access Images - Digital images created from another digital image through some kind of automated process, usually involving a loss of information. Techniques used to create derived images include sampling to a lower resolution, using lossy compression techniques, or altering an image using image processing techniques.

Digital Image - An electronic photograph, made up of a set of picture elements ("pixels"). Each pixel is assigned a tonal value (black, white, a shade of gray, or color) and is represented digitally in binary code (zeros and ones). The term "image" does not imply solely visual materials as source material; rather, a digital image is simply a representation of whatever is being captured, whether it be manuscripts, text, photographs, maps, drawings, blueprints, halftones, musical scores, 3-D objects, etc.

Dots Per Inch or DPI - A measure of resolution used for printed text or images and monitor display.

Dynamic Range (Bit Depth) - The number of colors or shades of gray that can be represented by a pixel. The smallest unit of data stored in a computer is called a bit. Dynamic range is a measurement of the number of bits used to represent each pixel in a digital image. 1 bit or bitonal means that a pixel can either be black or white. Bitonal imaging is good for black and

white images, such as line drawings and text. However, scanning in grayscale rather than bitonal may produce a better looking image. 8 bit color or 8 bit grayscale means that each pixel can be one of 256 shades of color or one of 256 shades of gray. 24 bit color means that each pixel can be one of 16.8 million colors. When moving to 48 bit color the available colors in the display will number 2800 times one trillion. This is an enormous number of colors. Plus a higher bit resolution can display more shades of gray. With 30 bit color depth, four times more gray can be represented in the display. Eight times more gray, or even higher, can be represented by a 36 or 48 color bit-depth display.

File Size - The file size of a digital image is proportional to its resolution. The higher the resolution, the bigger the file size — file size is different from image size.

Grayscale - A range of shades of gray in an image or the values represented between black and white.

Image Manipulation or Alteration - Making changes (such as tonal adjustments, cropping, etc.) to a digital image using image editing and processing software such as Adobe Photoshop.

Image size - Describes the actual physical dimensions of an image, not the size it appears on a
given display device.

JPEG - Joint Photographic Experts Group. A compression algorithm for condensing the size of image files. JPEGs are helpful in allowing access to full screen image files online because they require less storage and are therefore quicker to download into a web page.

JPEG-2000 - At its core, JPEG 2000 is an international standard for the compression of still digital images. JPEG 2000 improves on the compression performance of previous methods while offering significant new features and capabilities. The format is multi-resolution, which allows an application to access and decode only the amount of image needed. This allows the user to quickly view an extremely large JPEG 2000 image almost instantly by retrieving and decompressing a low resolution, display sized potion of the file. In addition, the format allows for new access opportunities such as zoom, pan and rotate. JPEG 2000 is still a lossy, compression technique but may have potential for becoming the file format of choice for archival master images in the near future.

Master Image - A digital image that is uncompressed and high-quality, therefore, retaining the best possible color information. It is meant to have lasting utility. Master images are usually saved in a nonproprietary format and kept off-line in a secure environment. Master images are of a higher resolution and quality than the digital image delivered to the user on-screen. An archival master accurately represents the original analog item and has an associated metadata record which provides descriptive, administrative, and technical information concerning the original and digital items.

Metadata - Data about data, or information provided about a digital object in order to provide access to that image. Usually includes information about the original object,

intellectual content of the image, digital representation data, the creation of the digital files, and security or rights management information.

Optical Resolution - The number of pixels (in both height and width) making up an image, the more pixels in an image, the higher the resolution, and the higher the resolution of an image, the greater its clarity and definition (and the larger the file size). Resolution can also refer to the output device, such as a computer monitor or printer, used to display the image. Image file resolution is often expressed as a ratio (such as 640x480 pixels), as is monitor resolution; however, resolution is also expressed in terms of PPI. The assumed universal monitor resolution for web users is 144 DPI. Image file resolution and output (print or display) resolution combine to influence the clarity of a digital image when it is viewed.

Pixel - Pixel is short for picture elements, which make up an image, similar to grains in a photograph or dots in a half-tone. Each pixel can represent a number of different shades or colors, depending on how much storage space is allocated for it. Pixels per inch refers to the number of pixels captured in a given inch. When referring to digital capture pixels per inch (PPI) is the preferred term, as it more accurately describes the digital image.

TIFF - Tagged Image/Interchange File Format a file storage format implemented on a wide variety of computer systems, usually used for archival or master digital capture.

Document: any object that is not yet digital. For example, a photograph, a book, a newspaper, a yearbook, a page from a diary, an entire diary, etc. that has not yet been scanned

Digital file: a document that has been scanned or digitized and converted into a computer-saved file and is made up of a set of picture elements (pixels). Digital files for the MMP are saved as TIFF file types.

Digitization: The process of converting analog information into digital format

Folder: Just like real world folders, folders on your hard drive store files. These files can be documents, programs, scripts, and any other kind of computer files you can think of. Folders can also store other folders.

Collection folder: the folder where all of a MMP collection's digital files and folder hierarchy are saved. This folder is named the same as the MMP Collection (e.g. Montana Yearbook Collection)

Folder hierarchy: how the parent and child folders are structured

Parent folder: a folder created within a collection folder that identifies a document whose digital files are stored within. May house child folders

Child folder: Child folders are stored in parent folders and can house other child folders and digital items

CONTENTdm VOCABULARY

Administration: CONTENTdm online interface for uploading edited files from the Project Client to the Montana Memory Project web site

Compound object: Multiple images files that are displayed to the end user as a single object (e.g. books, pamphlets, newspapers, and photo albums)

CONTENTdm: a windows-based, digital collection builder where data and digital items are prepared in large batches via the CONTENTdm Project Client and then uploaded to a CONTENTdm server

Digital collection: the items grouped by provenance or theme as proposed by contributors in the MMP Collection Application. All MMP digital collections are at http://mtmemory.org/

Import: when items are entered from a local computer into the Project Client

Item: A file and its associated metadata

Object: An item or a group of items that collectively represent a single work

OCR license: An OCR license, or Optical Character Recognition License, is used to convert a digitized image of text into a searchable text file. If you have text-based items (pamphlets, books, reports, etc.), please contact Katie Beall at kbeall@mt.gov to reserve an OCR license *before* entering items into the Project Client.

Project: the temporary interface used to save work in the Project Client while importing images and editing metadata for a collection

Project Client: Downloaded CONTENTdm software where data and digital items can be prepared in large batches

Upload for approval: the final step to be completed in the Project Client. Once a project's images and metadata have been imported and edited in a project, the items will be uploaded for approval. Once uploaded, the items are added to the pending queue in CONTENTdm Administration to be approved and indexed to the Montana Memory Project web site