



Digital Photograph Record Collection and Storage SOP SOP-WR-W-26

1. **APPLICABILITY.** This SOP applies to the TMDL and Shellfish programs in the Office of Water Resources where staff utilizes digital photography, including but not limited to shoreline surveys, environmental restoration or protection projects or any other photo-documentation purposes. Exemption from the use of this SOP for project work shall be allowed for reasons of inapplicability determined by management discretion. This SOP was adapted from DEM SOP-OD-QM-4. The changes to the SOP relate to the amount of metadata that is needed. Since these programs often take pictures for informational purposes only, it is up to the individual to decide (with their supervisor, if necessary), what level of metadata is needed for each set of photographs taken.
2. **PURPOSE.** Photography that has a reasonable probability to be considered for use as legal evidence, historic record or other value to the State must be protected from loss or destruction. This SOP provides a method to collect and store digital photographs and associated documentation data. The use of digital photography for documentation has resulted in a proliferation of data files that can be lost or easily destroyed, since unlike traditional printed-paper, they may not physically exist except in the form of magnetic or optically read media. There are many types of digital cameras, photographic processing software and operating systems in use currently at DEM, however certain common elements can be used as a framework to establish a standard method to assist in preservation of these records for easy retrieval and future use.
3. **DEFINITIONS**
 - 3.1. WWW - World Wide Web
 - 3.2. JPG - is a commonly used image file format for photographic images. JPEG is an acronym for the group that invented the format (Joint Photographic Experts Group)¹. When you create a JPEG or convert an image from another format to a JPEG, you are asked to specify the quality of image you want. Since the highest quality results in the largest file, you can make a trade-off between image quality and file size.
 - 3.3. GIF- Graphic Interchange Format²
 - 3.4. PNG - Image file format supported on the WWW³
 - 3.5. BLUETOOTH - a telecommunications industry specification that describes how cameras, mobile phones, computers, and personal digital assistants (PDAs) can be easily interconnected using a short-range wireless connection.
 - 3.6. THUMBNAIL - A reduced file size version of a photographic record used for indexing and previewing of images.

¹ http://searchwebservices.techtarget.com/sDefinition/0,,sid26_gci212425,00.html

² *ibid.*

³ *ibid*



- 3.7.** GPS - The GPS (Global Positioning System) is a "constellation" of 24 well-spaced satellites that orbit the Earth and make it possible for people with ground receivers to pinpoint their geographic location. A basic GPS receiver provides geographic position - longitude and latitude, within 100 meters. Some receivers are equipped with a display screen that shows a map of the position.⁴
- 3.8.** MEDIA - Electronic device that is designed to store or storing electronic records such as magnetic and optical disks, cards containing microchips etc.

4. RESPONSIBILITIES

- 4.1. COMPLIANCE** - All staff engaged in collecting DEM digital photographic records are responsible to determine applicability of this SOP to their work. See Section 1 above. Supervisors are responsible for ensuring that staff is familiar with and adhere to any SOPs affecting their program functions.

5. GUIDELINE AND PROCEDURES

5.1. CAMERA AND FIELD NOTES

- 5.1.1. Verify that the date and time on the camera is accurate.
- 5.1.2. Activate the visible date and time option such that the recorded image will be imprinted with the date and time of the photo.
- 5.1.3. Select appropriate resolution quality. The higher the resolution the fewer the images that can be recorded for a given media.
- 5.1.4. Descriptive documentation should be recorded in sequentially numbered field notes immediately after the images are collected for specific photograph detail recall. (See 5.5.1)

5.2. COMPUTER SUBDIRECTORIES CREATION AND FILE NAME CONVENTIONS

- 5.2.1. Create a subdirectory on the computer to store the image files.
- (A) File name conventions for subdirectory folders should be established to facilitate organization of records by Project, Station or Location.
- (B) Multiple photo documentation sessions at a particular station or location should have date coding in the subdirectory name convention.
- (C) Create a print image or report subdirectory to store the print versions of select images.
- 5.2.2. File name conventions for image files should be established to facilitate organization of records, for example, by: Project, Station or Location, Date, and a unique identifier, if necessary. (i.e. Project_Station_Date_UniqueIdentifier.jpg). An image taken for the Wood River Basin Monitoring Project at Station #2 on 19 August 2006 could be named "WRB_Station2_19AUG2006.jpg". If multiple pictures were taken at this station on this date, each file name should include a unique identifier (e.g. WRB_Station2_19AUG2006_Looking_Downstream.jpg". Renaming photos may not be needed if it is sufficient to place photos in a directory whose name includes the date the pictures were taken and the location or

⁴ http://searchmobilecomputing.techtarget.com/sDefinition/0,,sid40_gci213986,00.html



if a report is created that details photo information.

5.3. COMPUTER IMAGE TRANSFER AND THUMBNAIL PRINT

- 5.3.1. Transfer the image files to the computer by various methods below:
- (A) Connect camera directly to the computer with the supplied cable.
 - (B) Remove the memory card from the camera and use a card-reading device connected to the computer.
 - (C) Use of Bluetooth or other wireless transfer protocol.
- 5.3.2. When the device connection is recognized by the computer you will typically be given the option of storage file location and whether to delete the image files after transfer.
- (A) Do not select “delete after transfer” option until you are experienced with successful location and retrieval of your images from a previous photo transfer procedure.
 - (B) Select the appropriate subdirectory for transfer of the photos..
- 5.3.3. Validate the transfer of images to the new directory by viewing the directory and comparing file sizes to originals.
- 5.3.4. Deleting images from the camera or camera media.
- (A) If you are confident that the transfer was successful, avoid selecting and deleting the camera image processing files and delete only the camera image files with suffixes .jpg, .gif, or .png.
- 5.3.5. Print out a thumbnail sheet of photographs transferred to the file.

5.4. IMAGE ENHANCEMENT

- 5.4.1. Typical digital photography processing software enables simple improvement of images with respect to contrast, brightness and level of detail though special effects. If there is reason to believe that the image may be used for legal purposes, then any image-modified versions must not result in the replacement of the original image. Any modified image should be saved as a new file name encoded in a convention that clearly discloses image enhancement.

5.5. CREATE REPORT OR PRINT IMAGE FROM TEMPLATE

- 5.5.1. The decision to create a report for photographs is based on the use of those photographs. As mentioned in Section 5.2.2, it may be sufficient to place the photographs in a directory containing the project, the date, and the location of the photographs.
- 5.5.2. Templates for print out of photographic documentation may include:
- (A) Date of photo record.
 - (B) Originating DEM Office.
 - (C) Photographer name.
 - (D) Other DEM staff witnesses to photograph conditions.
 - (E) Image sequence number.
 - (F) Location or site of photography, GPS coordinates if available.
 - (G) Photo description or caption.
- 5.5.3. Load the template file and “Save-as” a new report name.
- 5.5.4. Select the best representative images for print out to a template appropriate in size to the level of detail required and copy them into the



template.

5.5.5. Fill out section 5.5.1 details in the template from memory and/or field notes.

5.5.6. Print the report and file it with the other project records including the above said thumbnail sheet.

5.6. CREATE DUPLICATE ELECTRONIC RECORD (BACKUP)

5.6.1. To maintain a permanent record and to create an electronic backup of the original photos programs shall adopt some of the mechanisms including but not limited to the following:

- burn a CD of the project work,
- copy to other internal drives,
- emailing them to storage areas,
- use of jump drives.

5.6.2. If available and network storage capacity allows, utilize DEM network to archive image files.

6. REFERENCES

6.1. See Footnotes.



**DIGITAL PHOTOGRAPH RECORD COLLECTION AND STORAGE SOP
SOP-WR-W-26**

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Print Name Signature

APPROVALS:

Quality Team Chair:

Tom Getz _____ Date: _____
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Assistant Director of Water Resources

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DISTRIBUTION:

(x) TMDLBy: _____ Date: _____
(x) ShellfishBy: _____ Date: _____