SGER Grant to Preserve Colorado's Born Digital Legislative History

BWF MetaEdit Guide

First Choice for Service

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1. Downloading BWF MetaEdit

BWF MetaEdit is an open source tool that supports embedding, validating, and exporting of metadata in Broadcast WAVE Format (BWF) files. It features the ability to Import, edit, embed, and export specified metadata elements in WAVE audio files. This section will cover downloading the BWF MetaEdit program.
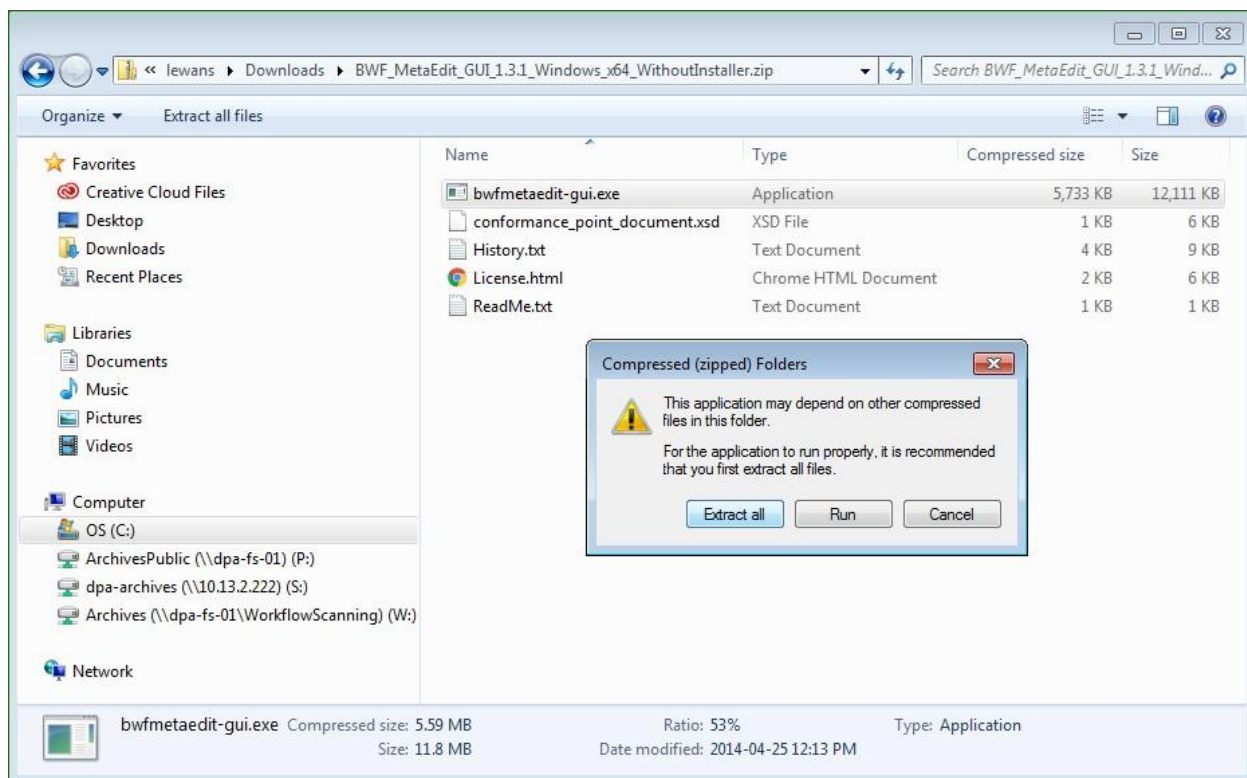
Figure 1.1 | Screen capture illustrating BWF MetaEdit program download and extraction

- Download BWF Meta Edit
    - *BWF_MetaEdit_GUI_1.3.1_Windows_i386*
    - https://sourceforge.net/projects/bwfmetaedit/files/binary/bwfmetaedit-gui/1.3.1/BWF_MetaEdit_GUI_1.3.1_Windows_x64_WithoutInstaller.zip/download

- Open the *BWF_MetaEdit_GUI_1.3.1_Windows_x64_WithoutInstaller.zip* folder > Open *bwfmetaedit-gui.exe* > Extract all (Figure 1.1) > Extract > open *bwfmetaedit-gui.exe* > Run
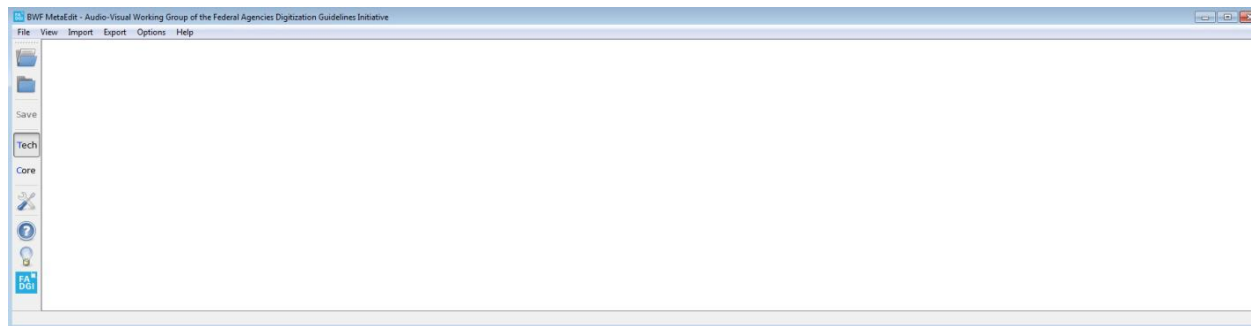   - BWF MetaEdit will open (Figure 1.2)

Figure 1.2 | Screen capture illustrating BWF MetaEdit program main screen/GUI

2. Format Conversion from Freedom System

This section will cover saving/exporting files from the Freedom Manger System from the WAV with codec to a usable WAV format. Figure 2.1 illustrates the elements of the Freedom Manger System user interface.
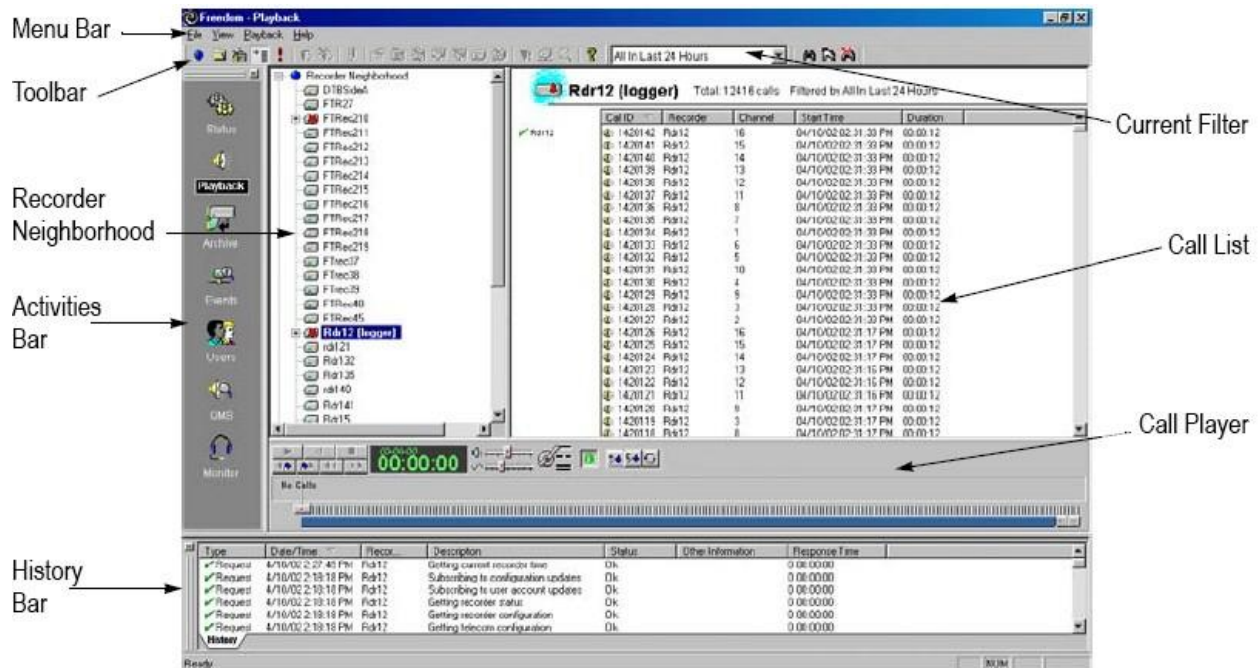

Figure 2.1 | Screen capture illustrating Freedom System Manager interface elements

- Open Freedom System Manager Properties
    - A window stating, "*A connection with the Recorder Manger cannot be established. Do you want to continue?* "
    - Click Yes or anywhere on screen and program will continue loading
    - Playback button should be selected in the Activities Bar

- Expand the directory tree in Recorder Neighborhood to the appropriate folder, year, month, day (Figure 2.2)
- Ensure following Columns are displayed (Figure 2.2)
    - Call ID
    - Start Time
    - Duration
    - End Time
    - Channel
    - Channel Name
- Clicking on any of the Columns will sort the call list appropriately

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- Right-click in Call List to display Column options under Columns (Figure 2.2)
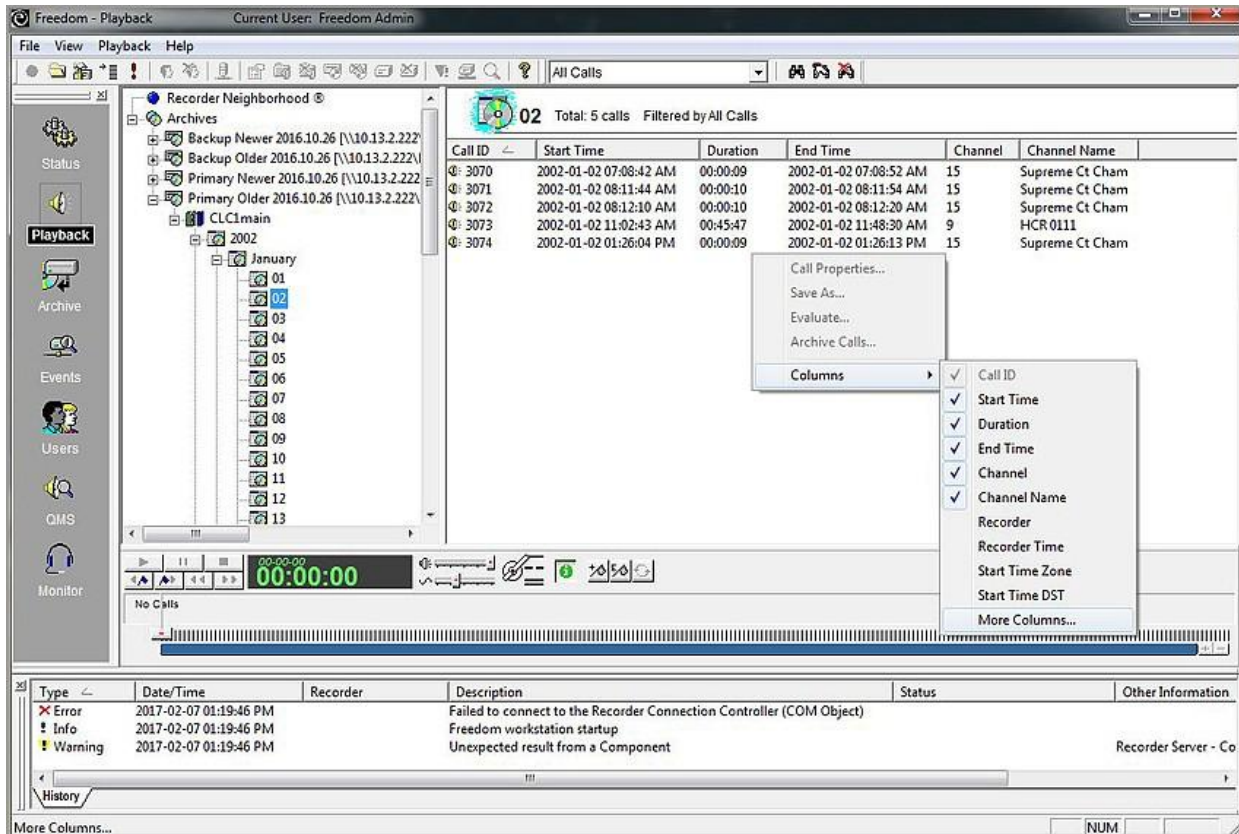

Figure 2.2 | Screen capture illustrating expanded folders in the Recorder Neighborhood, recommended call filters displayed, calls filtered by the Call ID, and additional call filter options accessed via right-click

- Select the appropriate Column to sort by for export
    - FSM will export by this order
- Click the first Call in the Call List, Shift + Click last call to select all the calls for the day
- Right Click > Save As will open the *Convert and Save Call Audio as Wave Files* dialog (Figure 2.3)
    - Options and suggested export choices are as follows:
        - Format conversion
            - *PCM (standard WAV) | 44.100 khz | 16 bit*
        - New Name
            - General convention of *year_month_day* is recommend; however, this name will be changed later
        - Folder
            - *File path to folder for converted files*
    - Upon saving, FSM will create a unique identifier number based on the sort order of files selected by Column
- Select Save (Figure 2.3)
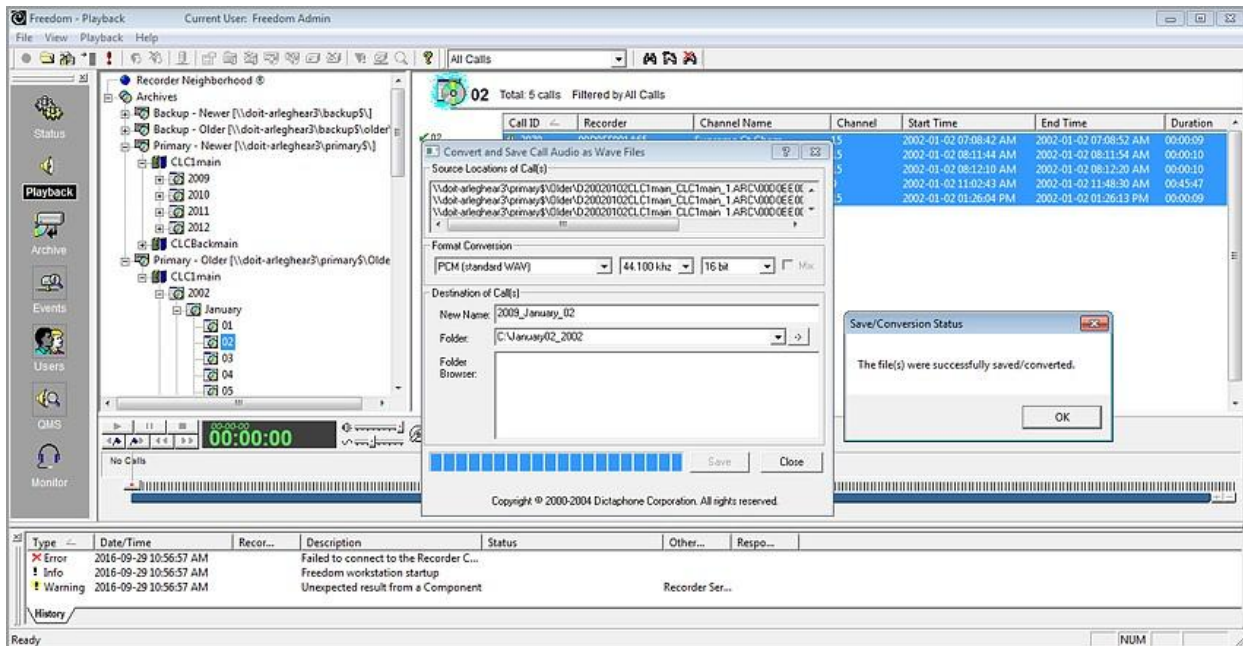   - Files will be converted to WAV and appear in the appropriate folder

Figure 2.3 | Screen capture illustrating format conversion settings for Freedom System Manager

- Select OK
- Close *Convert and Save Call Audio as Wave Files* dialog
    - Viewing the converting files in the appropriate folder will reveal that Freedom has assigned a unique identifier number to all files beginning with *0* (Figure 2.4)
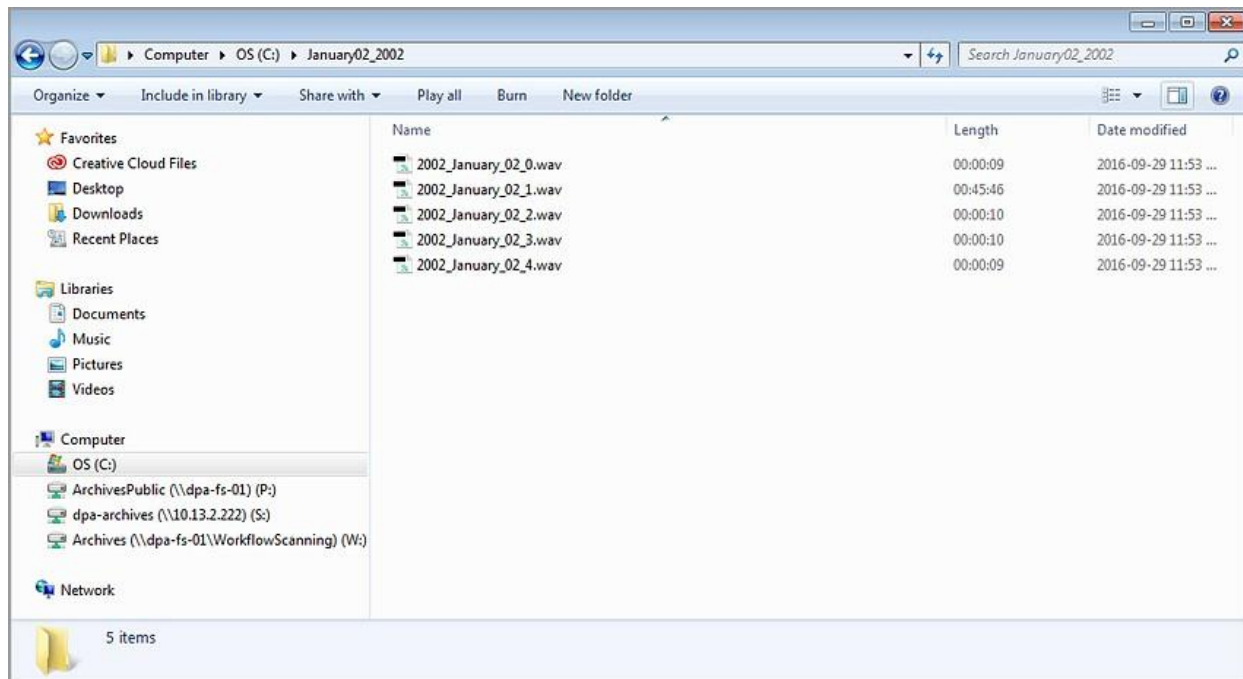

Figure 2.4 | Screen capture illustrating saved files after format conversation from Freedom System Manager and assigned unique identifier numbers

- Repeat the selection and export process
  - On days with 50-plus calls, call exportation will need to be done in multiple batches
  - Successive batches should be renamed with a new count number which follows the previous count (Figure 2.5)
    - Example of last file of first conversion: 20090102_45
    - Example of first file of successive conversion: 20090102_46_0
    - Adding the last two digits in the file name will give total file count:
      - 20090102_46_0 = 20090102_46
      - 20090102_46_5 = 20090102_51

20100105_v01_20.wav	00:00:09	2017-01-27 10:44 AM	WAVE Audio File	791 KB
20100105_v01_21.wav	00:00:22	2017-01-27 10:44 AM	WAVE Audio File	1,912 KB
20100105_v01_22.wav	00:05:18	2017-01-27 10:44 AM	WAVE Audio File	27,400 KB
20100105_v01_23.wav	00:00:41	2017-01-27 10:44 AM	WAVE Audio File	3,576 KB
20100105_v01_24.wav	00:00:14	2017-01-27 10:44 AM	WAVE Audio File	1,259 KB
20100105_v01_25.wav	00:00:11	2017-01-27 10:44 AM	WAVE Audio File	985 KB
20100105_v01_26.wav	00:00:11	2017-01-27 10:44 AM	WAVE Audio File	992 KB
20100105_v01_27.wav	00:00:11	2017-01-27 10:44 AM	WAVE Audio File	969 KB
20100105_v01_28.wav	00:00:09	2017-01-27 10:44 AM	WAVE Audio File	837 KB
20100105_v01_29.wav	00:00:09	2017-01-27 10:44 AM	WAVE Audio File	794 KB
20100105_v01_30_0.wav	00:01:43	2017-01-27 11:13 AM	WAVE Audio File	8,879 KB
20100105_v01_30_1.wav	00:00:11	2017-01-27 11:13 AM	WAVE Audio File	1,021 KB
20100105_v01_30_2.wav	00:14:09	2017-01-27 11:13 AM	WAVE Audio File	73,193 KB
20100105_v01_30_3.wav	00:03:13	2017-01-27 11:13 AM	WAVE Audio File	16,706 KB
20100105_v01_30_4.wav	00:01:54	2017-01-27 11:13 AM	WAVE Audio File	9,834 KB
20100105_v01_30_5.wav	00:02:15	2017-01-27 11:13 AM	WAVE Audio File	11,702 KB

Figure 1.5 | Screen capture illustrating successive batch number addition

3. Renaming Converted Files

This section will cover renaming the files exported from Freedom Manager System using the appropriate naming convention.

- Navigate to the folder specified for the converted Freedom files
- Check that the correct number of files transferred
- Rename the newly converted WAV files according to the naming convention (Example 3.1)

HCR_0111_January02_1102am_1148am_2009_M

    a   b   c   d   e

Example 3.1 | Example of naming convention for renaming converted Freedom System files

a. Channel Name
    - Enter with spaces as underscores
b. Date
    - Month followed by day
    Single digit dates entered as: *01, 02, 03* etc.
c. Start and End Times
    - Hour and minutes, am and pm
    - No spaces or underscores between time and period of day
    - Start and end times may repeat. Use unique number for separation (Example 3.2)
d. Year
e. Denotes that this is a Master WAV copy

House_Chambers_January07_1005am_1005am_2009_M

House_Chambers_January07_1005am_1005am_2009_2_M

Example 3.2 | Example demonstrating use of unique number to separate repeated file names

- Check that the correct file is being renamed by observing the length/duration of recordings (Figure 3.3)
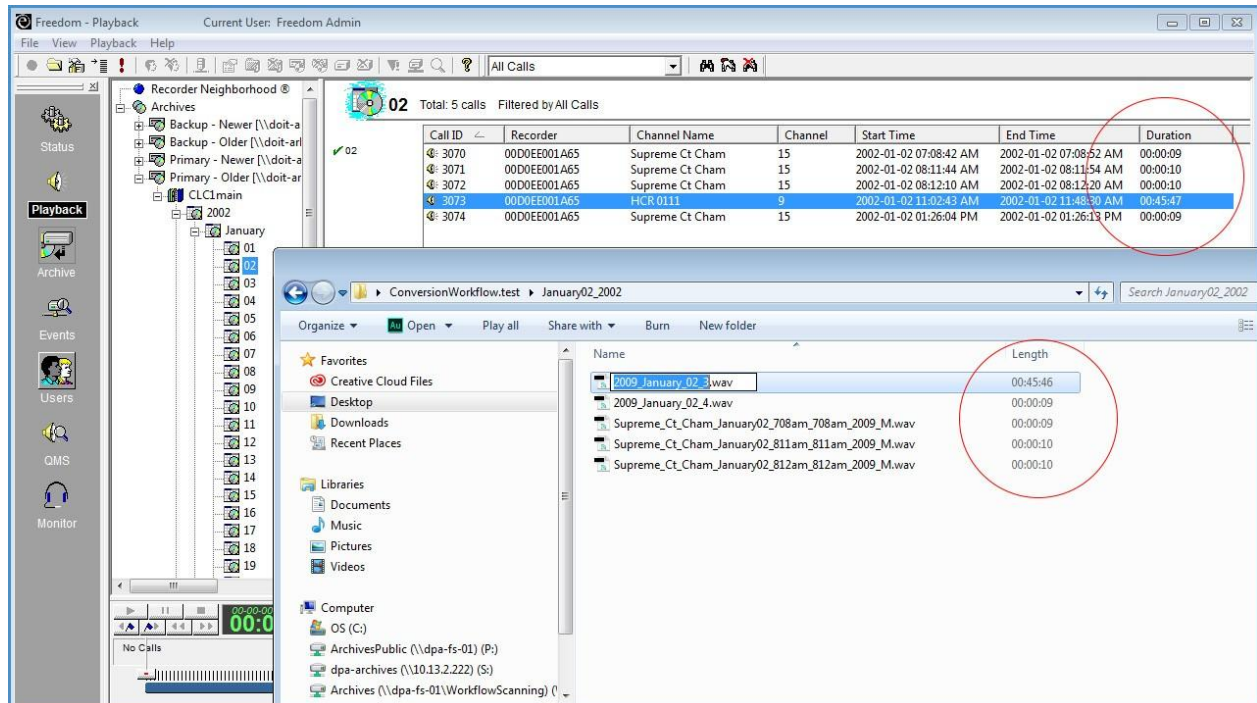

Figure 3.3 | Screen capture illustrating observation of *length/duration* details for accurate file renaming

4. Creating a New Core Document Template

The CORE Document is essentially a list of filepaths associated with BEXT and LIST-INFO metadata field values. This section will describe how to create a Core Document template from scratch if one is not provided. If a template is provided, Section 5 will describe the steps necessary to create a complete working Core Document for locating and importing files and their associated metadata through BWF MetaEdit.

- Open a WAV file in Adobe Audition
- Window > Metadata (Ctrl +P)
- Under the BWF, ID3, and RIFF tabs, fill in the appropriate information (Figure 4.1)
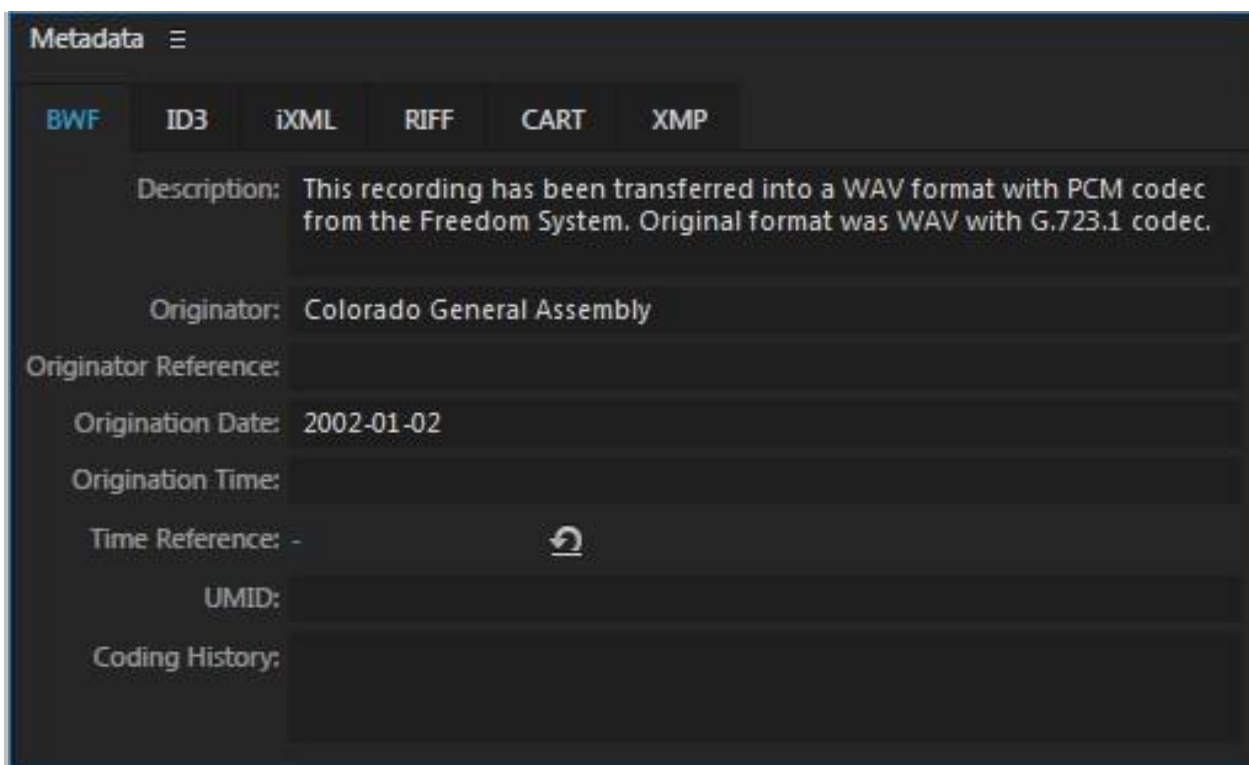
Figure 4.1 | Screen capture illustrating the Metadata panel in Adobe Audition

- File > Save (Ctrl + S)
- Open BWF MetaEdit
- File > Open File(s)… > file you just saved
- Select the Core tab on the left and verify appropriate metadata (from above) is present
- Export > Core Document (one global CSV file)… > title it appropriately
- Open the exported CSV file in Microsoft Excel
    - Appropriate fields should be populated
    - File maybe be saved and used as a template, being mindful of usual modifications to *FileName, OriginationDate,* and *Technician fields*

5. Creating the Core Document

This section will describe the steps necessary to create a complete working Core Document for locating and importing files and their associated metadata through BWF MetaEdit.

- Open Core Template Excel file
    - Adjust column widths as desired
- Navigate to folder specified to for converted Freedom files
- Select all files (Ctrl + A; or click the first item, hold down the Shift key, and then click the last item) > Shift + Right click > Copy as path (Figure 5.1)
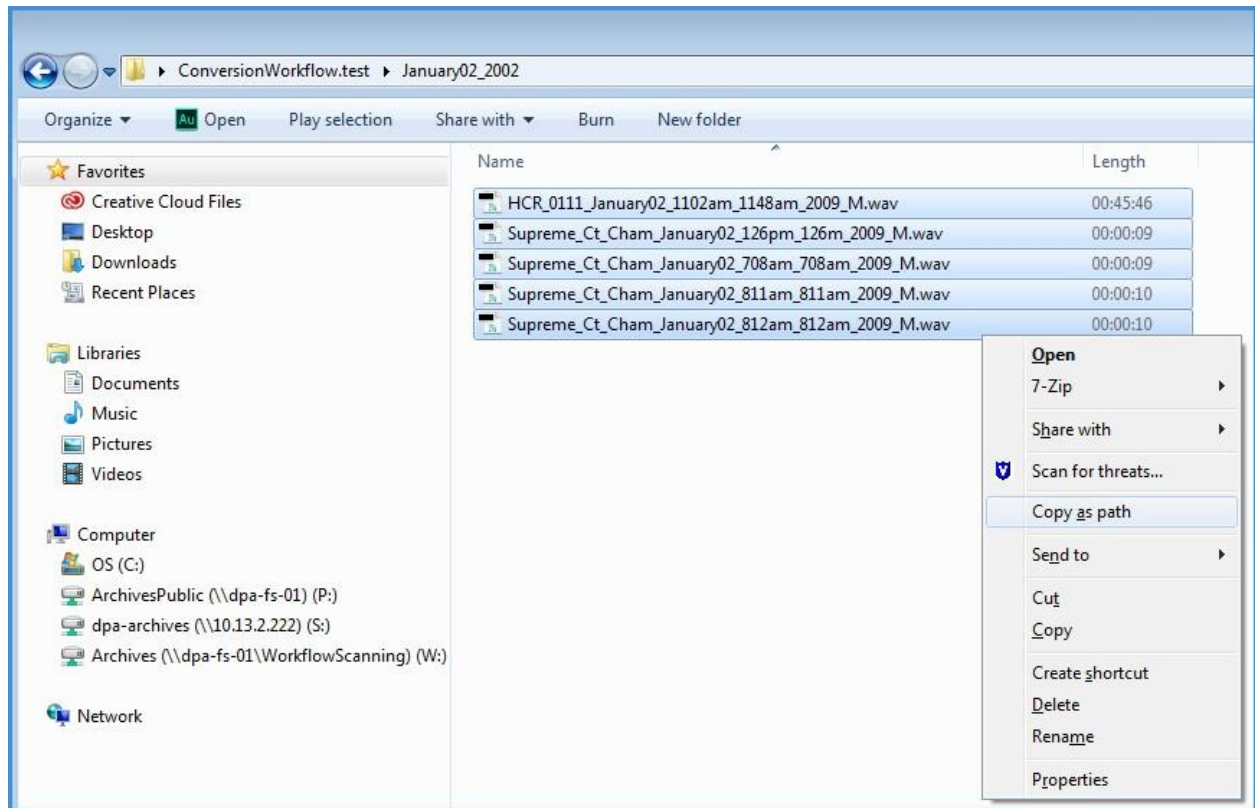

Figure 5.1 Screen capture illustrating selection of files and how to copy the file paths

- In Excel, column A (Filename), select Row 2, Paste (Figure 5.2)
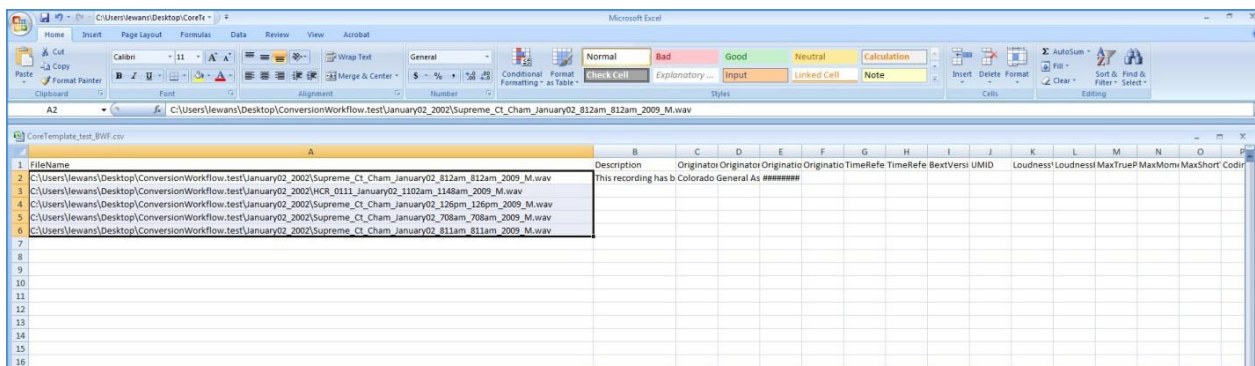

Figure 5.2 | Screen capture illustrating pasting of copied file paths into the Core document

- Complete file path should be visible
- Check for correct number of files and appropriate file names

- Copy and paste all of the provided metadata down the columns to correspond with the appropriate number of files (Figure 5.3, Table 5.4)
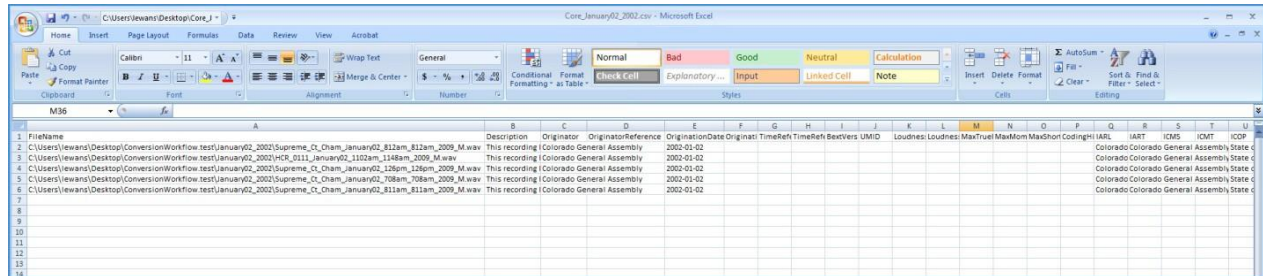

Figure 5.3 | Screen capture illustrating appropriately populated columns

- Metadata information provided is generic and universal
- *OriginationDate* must be in *yyyy-mm-dd* format
- Change technician placeholder to your name

Column A	FileName	*Full file path*
Column B	Description	This recording has been transferred into a WAV format with PCM codec from the Freedom System. Original format was WAV with G.723.1 codec.
Column C	Originator	Colorado General Assembly
Column E	OriginationDate	Date of original recording in *yyyy-mm-dd* format Example: *2002-01-02*
Column Q	IARL (Archival Location)	Colorado State Archives
Column R	IART (Artist)	Colorado General Assembly
Column U	ICOP (Copyright)	State of Colorado for public use. Credit Colorado State Archives.
Column Z	IMED (Medium)	WAV codec G.723.1, with Freedom System software.

Column AG	ITCH (Technician)	*Your name*

Table 5.4 | Table of column names and their associated descriptions

- Save template as CSV following appropriate naming convention (Example 5.5)

Core_January02_2009

a   b   c

Example 5.5 Example of naming convention for renaming the Core Document

>   a. Denotes as Core document
>   b. Date
>   - Month followed by day
>   - Single digit dates entered as: *01, 02, 03* etc.
>   c. Year

6. Importing the Core Document into BWF MetaEdit

This section will describe how to import the Core Document into BWF MetaEdit and save the metadata additions to the WAV format audio file.

- Open BWF MetaEdit > select Run > Import > Core Document… > *name of Core document*
    - Example: *Core_January02_2009*
    - BWF MetaEdit will find the WAV file through the file path and populate the table with the appropriate metadata
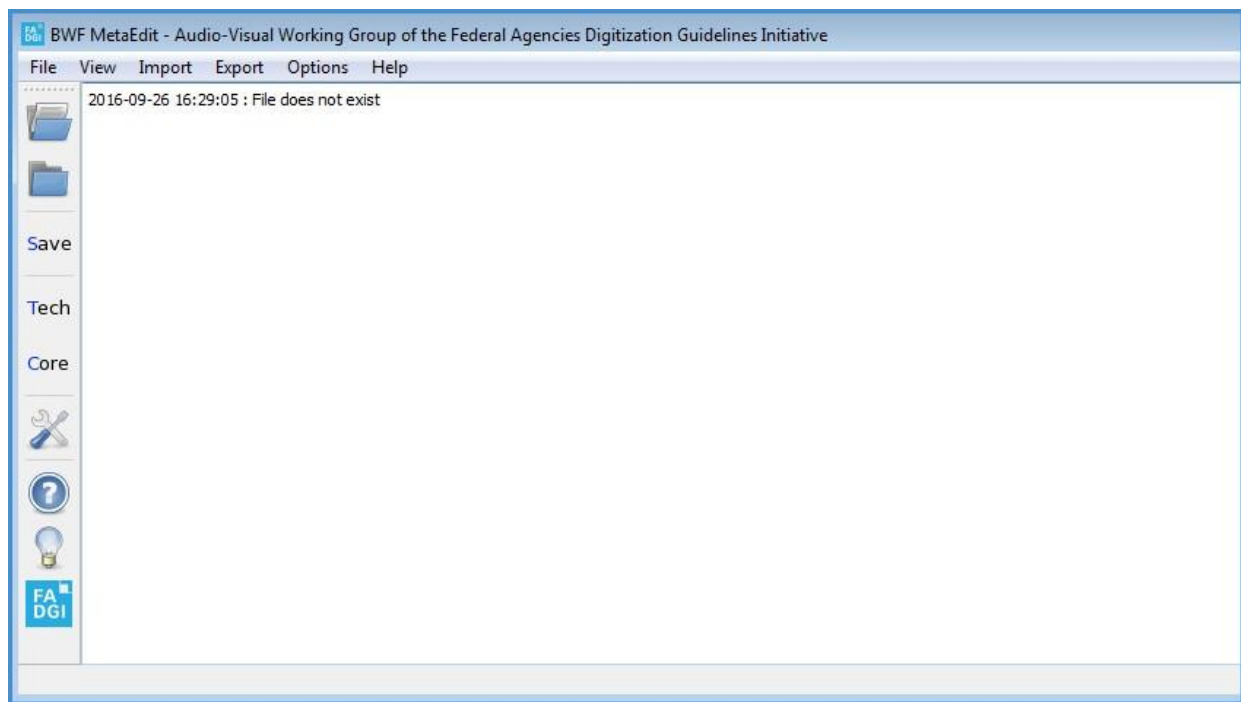   - An error may appear stating, *File does not exist* (Figure 6.1)

Figure 6.1 | Screen capture illustrating *File does not exist* error

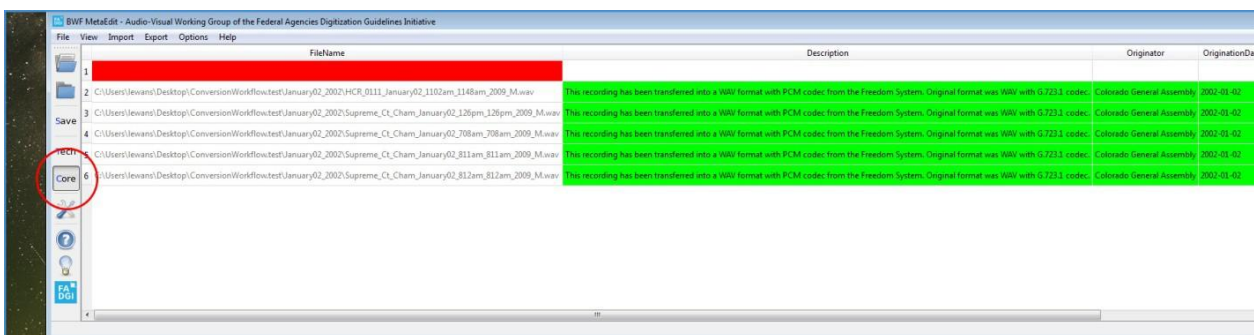- Select the Core button to confirm the correct number of files and FileNames (Figure 6.2)

Figure 6.2 | Screen capture illustrating import of files into BWF through the Core Document. Successful import of new information related to a file is highlighted in green

- BWF MetaEdit may show Row 1 as missing data, sometimes it does this, other times it does not. This is the *File does not exist* error that may be seen upon initial import of the Core document
- Confirm that the correct FileNames have been found
- File > Save all modified files
  - Files may be opened in Adobe Audition to confirm correct metadata embedding

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