Susitna-Watana Hydroelectric Project Document
ARLIS Uniform Cover Page

Title: About the Susitna-Watana Hydroelectric Project aerial videos and instructions for obtaining and play	**SuWa 3**

Author(s) – Personal:

Author(s) – Corporate: [Alaska Energy Authority]

AEA-identified category, if specified: 2012 Habitat Videography

AEA-identified series, if specified:

Series (ARLIS-assigned report number): Susitna-Watana Hydroelectric Project document number 3	**Existing numbers on document:**
Published by: [Anchorage, Alaska : Alaska Energy Authority, 2012]	**Date published:** August 2012
Published for: Prepared for Alaska Energy Authority	**Date or date range of report:**
Volume and/or Part numbers:	**Final or Draft status, as indicated:**
Document type:	**Pagination:** 3 leaves
Related work(s): 1) Susitna Watana Hydroelectric Project habitat map book (SuWa 4) 2) [videorecordings -- not cataloged]	**Pages added/changed by ARLIS:**
Notes:	

All reports in the Susitna-Watana Hydroelectric Project Document series include an ARLIS-produced cover page and an ARLIS-assigned number for uniformity and citability. All reports are posted online at http://www.arlis.org/resources/susitna-watana/

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SUSITNA-WATANA HYDRO

About the Susitna-Watana Hydroelectric Project Aerial Videos And Instructions for Obtaining and Playing

As part of the Susitna-Watana Hydroelectric Project licensing process, Alaska Energy Authority (AEA) shot low-altitude video of tributaries and mainstem reaches in the Middle and Upper segments of the Susitna River. The videos are provided by AEA for technical use by Project scientists and Licensing Participants and for use by the general public to gain a better understanding of the Susitna River and the Project environment. These video files are public domain and may be copied without permission.

1.   OBTAINING THE AERIAL VIDEO FILES

Videos are high definition (HD) and therefore will not play by streaming over the web. Because of their large size (39.7 GB), even downloading the files from the AEA public website would take over 12 hours. For this reason, AEA is providing the video files on a thumb drive for users to download to their local hard drive (internal or external). Beginning April 1, 2013, the thumb drives can be temporarily checked out in person or by mail. To arrange to check out a thumb drive, please contact Sara Nogg at:

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2.   MEDIA PLAYER SOFTWARE

VLC Media Player is the recommended media player. Other media players will generally work but VLC is most suitable for optimum user control and trouble free playing.   VLC is a free and open source program available from the VideoLan Organization http://www.videolan.org/vlc/. Versions are available for Windows, Mac, Linux, and portable devices. Both an installer version (vlc-2.0.5-win32.exe) and a Zip Package version (vlc-2.0.5-win32.zip) are available.

2.1.   Installer Version

The installer version requires that the user have administrative rights to install applications. Run the file vlc-2.0.5-win32.exe and follow the instructions. After installing VLC, the video is playable by simply double-clicking on the file.

2.2.   ZIP Version

The link above will allow you to download VLC and then you can install it using their install wizard.   If you do not have administrative rights you can choose to download the latest "Zip Package" that allows you to run VLC from any directory you wish without installing it onto your

computer http://www.videolan.org/vlc/download-windows.html. Simply run the file VLC.EXE in the folder vlc-2.0.5 after unzipping. After starting VLC, open the Media tab on the menu bar and browse for the video file you want to play.

You may be required to get permission from your I/T department before downloading or installing any applications. VLC is licensed under the GNU General Public License Version 2. You can find any legal information here: http://www.videolan.org/legal.html

2.3 Playing Without VLC

If your IT Department does not permit you to use VLC, you should be able to view the videos if you have Windows 7 or better. You can also view the videos using any media player that can read an MP4 file. The MP4 format is a widely used format for portable devices and desktops with the latest operating systems.

In Windows, double click on the MP4 video file to open it, or you can right-click on an MP4 file and choose "Open With" and then select one of the installed video players.

3. ABOUT THE VIDEOS

All but two of the videos were shot in an upstream direction. Two were shot in a downstream direction because of strong sun glare when flying in an upstream direction. Speed and height-above-ground of the helicopter varied between 15 and 45 miles per hour and 75 to 250 feet, depending on the size of the stream and the narrowness of the stream corridor.

Narration between the videographer, narrator/navigator, and the pilot was recorded real-time onto the videos. Note that instructions to the pilot and discussions in the cockpit refer to the left and right side of the river from an upstream looking perspective, as opposed to the downstream orientation adopted for the Project. The obvious reason is that it would have been far too confusing for the pilot to follow instructions reverse to the direction of flying.

Occasionally the narrator/navigator audibly specifies the rivermile of the helicopter location or the rivermile of a geographic feature. At the time of the video flight, rivermile maps used by the narrator/navigator had not yet been updated to the Project Rivermile (PRM) convention adopted for the Project. Use the Project Rivermiles displayed in the information bar in the lower left corner of the screen. The PRM of the helicopter is displayed, whether in the mainstem, a primary, or a secondary tributary. When in a tributary, the PRM of the tributary confluence is held constant while the PRM location of the helicopter in the tributary is active.

4. WORKING WITH THE VIDEO AND MAPBOOK

While the videos can be used alone, using the video and the Mapbook.pdf (included on the thumb drive) simultaneously provides an excellent means of following the path of the video on a map. Two screens are optimal for viewing in this way, but if only one screen is available, VLC can be set to "Always on Top" and the video image made small enough and moved to a corner to view both the video and the Mapbook simultaneously on the same screen. Zoom in on the Mapbook to your preference.

Each tile on the Mapbook index is linked to its respective page. Hover over the tile you want to select and double click. Note that the link goes to the first page of a set of two maps, an orthophoto and a USGS topographic map. Note also that orthophoto resolution above Devils Canyon is very poor above approximately 2,000 feet.   Hitting "Control Home" takes you back to the map index.

The information bar at the bottom of each video provides the Project Rivermile, latitude and longitude, altitude of the helicopter, clock time, and video time code. Use the rivermiles to coordinate with the Mapbook page. GPS coordinates and PRMs are based on the position of the helicopter, not the camera view.   At the camera angle most commonly used, the view in the video is approximately 0.1 to 0.2 miles ahead of the location shown in the information panel. For this and other reasons, spatial measurements of geographic features seen in the video must be obtained using GIS. Altitude was obtained from the eTrex GPS unit and is accurate to approximately 30 feet. Use "TimeCode" displayed in yellow in the information bar as the primary video location referencing tool.

5.   <u>TIPS FOR USING VLC</u>

VLC has several useful features and controls, many of which the user can add to the control panel. These features are accessible from the menu bar or by right clicking on the screen. Some include:

- Always on Top
- Image Capture
- Jump Forward and Backward
- Frame by Frame Advance
- Variable Forward Speed
- Jump to Specific Time