

## CASE STUDY: Meandering Stream Analysis

Airphrame's orthographic and contour maps of Cache Creek help Yolo County's GIS Group develop better resource management plans and vital Right Of Way encroachment updates.

### Background:

In June 1994, the Board of Supervisors adopted a framework outlining the objectives for the Cache Creek Resource Management Plan (CCRMP). These objectives include reinforcing floodway and channel stability, improving open space and recreation areas, and fortifying the cultural landscape. The CCRMP provides a policy framework and implementation standards for the restoration of 14.5 miles of lower Cache Creek, while the Cache Creek Improvement Program (CCIP) identifies particular projects including: bank stabilization, channel maintenance, and habitat restoration.

“Providing information vital for creating better water system management.”

### Challenge:

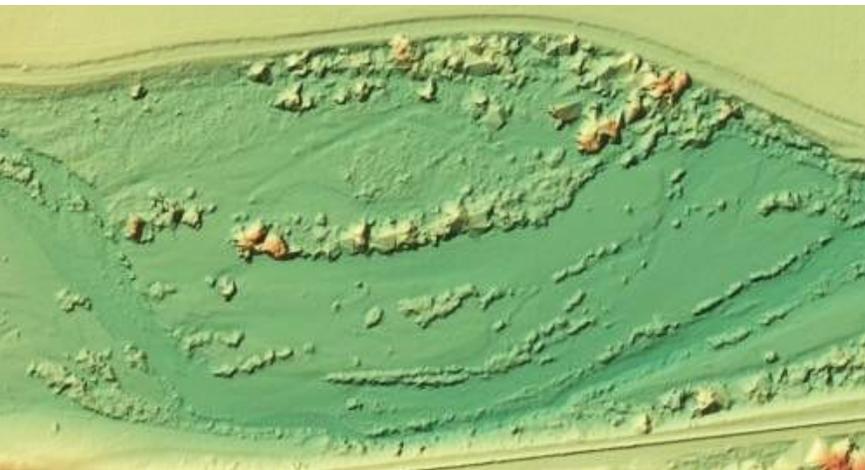
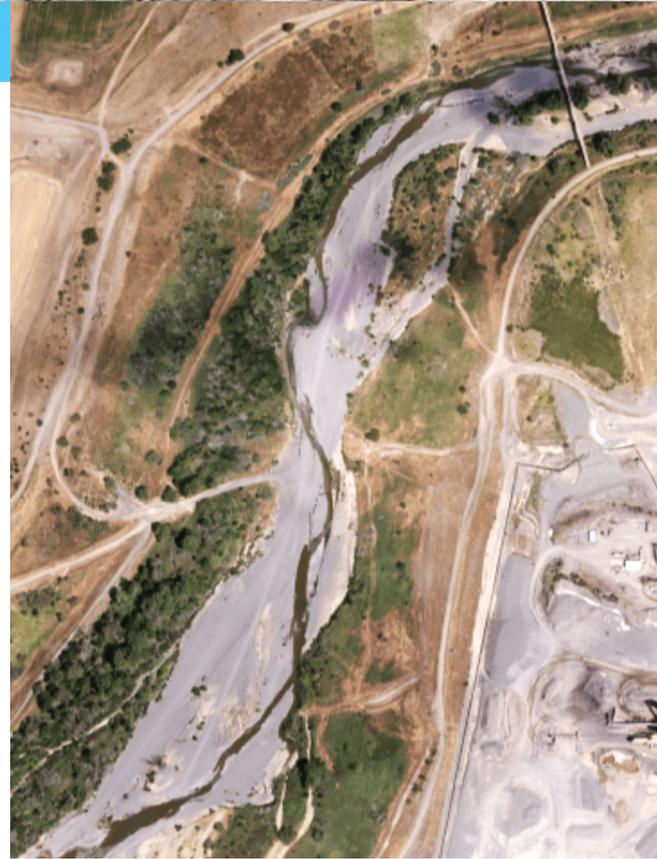
Due to Cache Creek's ongoing meandering, stream bank erosion is a natural and common event along the waterway where many banks are already eroding, sloughed or undercut. This presents a problem in locations where development has limited the meandering nature of streams and where streams have been channelized. It can also be problematic when stream bank structures, such as bridges and culverts, are placed where they can cause damage to downstream areas, especially during flood periods.

### Solution:

Stabilizing these fragile areas can help to minimize sedimentation and unwanted meandering, protect adjacent land from damage, and improve the natural habitat for fish and wildlife. Analyzing and addressing creek erosion involves the compilation and synthesis of existing data, field reconnaissance and site investigations, interpretation of aerial imagery, and evaluation of geomorphic characteristics from a high-resolution topographic dataset. Using Airphrame's orthographic maps, DEMs, and contour maps, CCRMP can better assess how to both protect the environment and bolster development along the Cache Creek water system.

### Results:

Airphrame's topographic maps of Cache Creek provide information vital for creating better water system management and land development strategies. By being able to assess the risk of potential bank erosion and channel migration in future decades, CCRMP can develop and execute tactics to ensure the water system and adjacent lands are protected. Airphrame's maps also allow local residents and land managers to conceptualize stream dynamics at a given location, and to identify areas of potential hazardous development and channel migration so they can make informed development decisions.



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