

The letters 'UC' in a large, bold, orange font, positioned in the top left corner of the slide. The background of the slide is a textured orange-to-red gradient with a stylized topographic map overlay on the right side, featuring contour lines and a blue grid pattern representing a stream or urban area.

# RTK Accuracy with Collector for Stream Monitoring

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# Task

## Monitoring Stream Restoration Pipeline Post-Construction

- Ruby Pipeline

- Traverses almost 700 miles from southern Oregon, through Nevada and Utah, terminating in southwest Wyoming
- Crosses more than 1,500 streams
- In collaboration with US Fish and Wildlife Service, long-term monitoring sites established at hundreds of streams
- Monitored revegetation and erosion

# Difficulties

To monitor erosion over time, cross sectional and longitudinal profiles were established but this system proved difficult to repeat on a yearly basis:

- Flagging measurement locations along each stream crossing not sustainable
- Necessary to record high-accuracy locations of each measure point to make repeatable
- Submeter handheld GPS equipment proved to be too inaccurate
- Disconnected functionality of handheld GPS proved inefficient in passing data from field to office

# Solution

To create efficiency and increase accuracy of established points and return visits, we decided to deploy iPads using Collector and Bluetooth connected to RTK GNSS Receivers

This created a difficulty in that the areas were too remote to easily tap into existing RTK networks for ease of acquiring real-time centimeter accuracy

To account for this, we deployed a system to establish a benchmark at each stream crossing and broadcast centimeter RTK corrections from a base station to a rover receiver connected to the iPad running Collector

# Successfully Implemented Centimeter Accuracy and Increased Efficiency

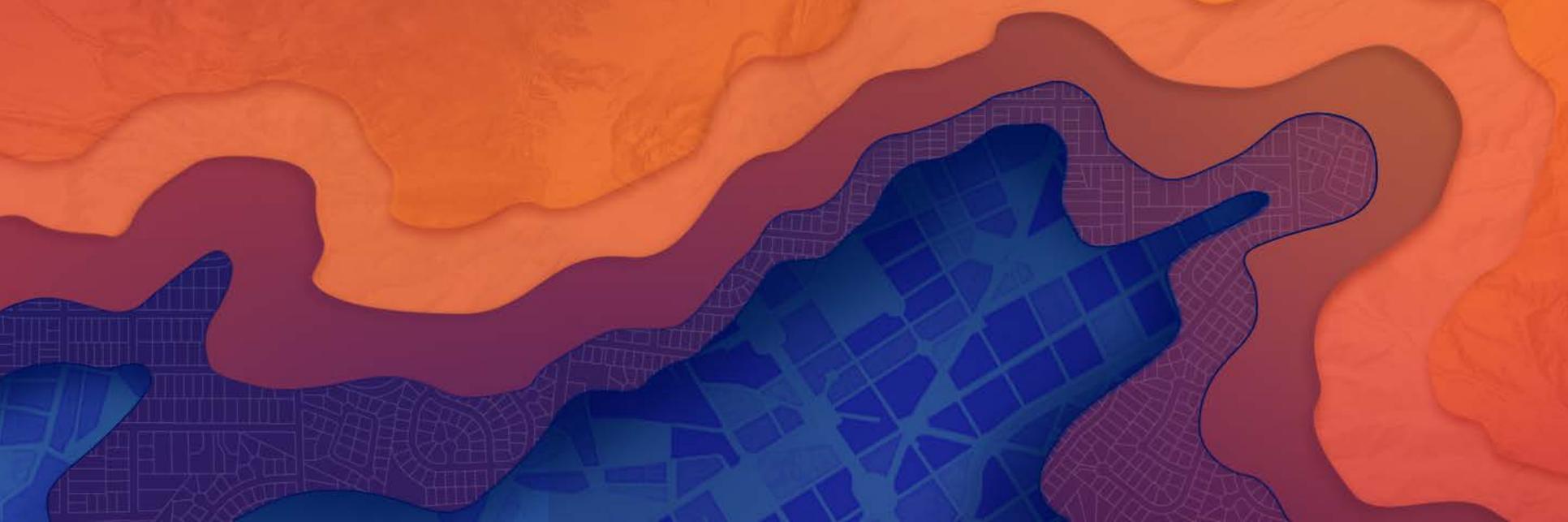
## Each Team Used:

- 1 Arrow 200 receiver as a base station connected to a 900MHz radio
- 1 Arrow 200 receiver as a rover connected to a 900MHz radio and an iPad running Collector

Teams were able to easily upload field data each night via ArcGIS Online and wifi service in their hotel accommodations

# Future surveys will be faster

Much more confidence in the return locating of stream profile measure points.



# Thank you for your time

Questions?

