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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

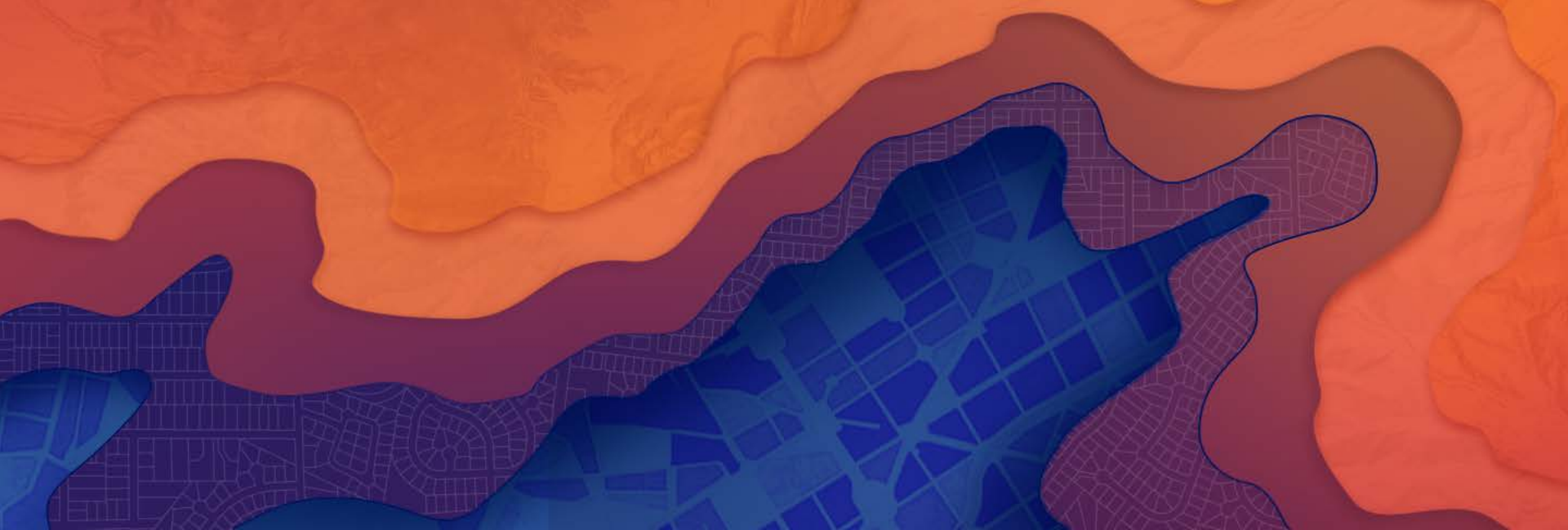
Each Team Used:

- 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?

