

## Data Collection & Product Report for 2017 Seed Project: Mapping of Diamond Fork River in Utah



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### Data Collection Summary:

Collection Dates, Flights:	3 flights on October 3,4 and 6, 2017 (DOY 276,277 & 279)
Aircraft, Equipment:	Piper PA-31-350 Navajo Chieftain (N640WA), Optech Titan (14SEN340)
Flight Plan Parameters:	Flying Height: 1000 m AGL, Swath Width: 750 m, Overlap: 50%
Equipment Parameters:	PRF: 75 kHz per laser: total 225kHz, Scan Frequency: 32 Hz, Scan Angle: $\pm 25^\circ$
Imagery Flight Plan Parameters:	Collected coincidentally
Collected Area:	60 km <sup>2</sup>

### GNSS Reference Station Summary:

Station Name	Operating Agency	Coordinates – NAD83:2011(Horizontal)/NAVD88:Geoid12B(Vertical)
CHER	NCALM	40.1368990176, 111.6577206583, 1381.410m
MPUT	UNAVCO	40 0 56.13941, 111 38 1.01890, 1846.859m
P112	UNAVCO	39 49 0.84353, 111 26 59.93855, 1947.673m

### Data Processing Summary:

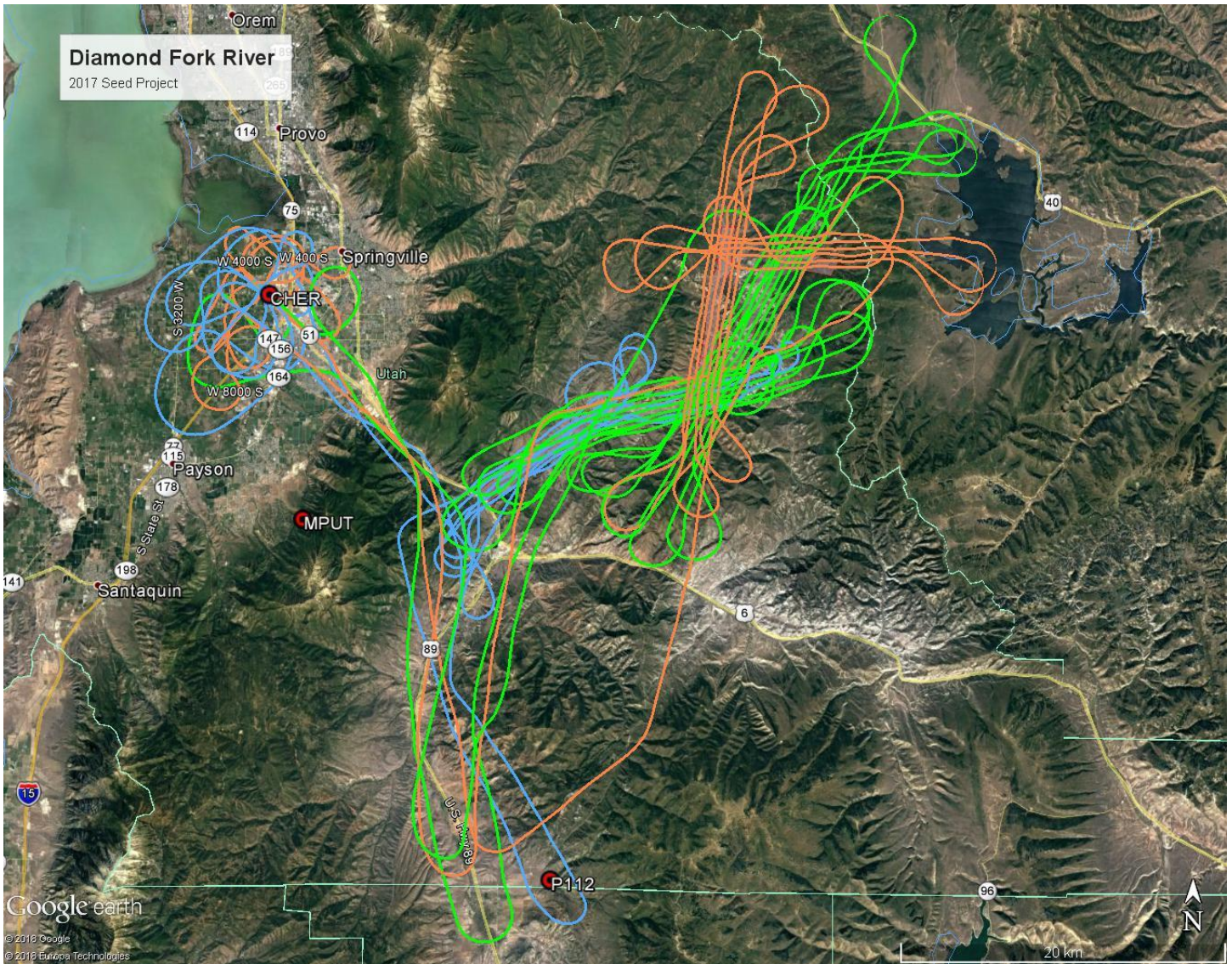
Scan Angle Cutoff:	1 degree
Intensity Normalization (Range):	1000 m
Ground Classification:	done using Terrascan
Bathymetry Correction:	Applied using in-house bathymetry correction program that corrects for elevation as well as horizontal position errors due to refraction
Elevation Model Generation:	0.5 m pixel resolution using TIN model

### Data Product Summary:

Horizontal / Vertical Datum:	NAD83(2011)epoch 2010.00/NAVD88-Geoid12B
Projection / Units:	UTM Zone 12N/meters
Point Cloud Tiles:	1000-m $\times$ 1000-m tiles in LAS format (Version 1.4) classified by ground(class 2), unclassified (class-1), bathymetry(class-14), and water surface/column (class-15)returns
Bare-Earth Elevation Model:	ESRI FLT format @ 50-cm resolution from classified ground and bathymetry points
Bare-Earth Hillshade:	ESRI-created raster @ 50-cm resolution
First-Surface Elevation Model:	ESRI FLT format @ 50-cm resolution with first returns
First-Surface Hillshade:	ESRI-created raster @ 50-cm resolution
Aerial Images:	Radiometrically corrected and ortho-rectified 24-bit TIFF files with timestamp and location information.

A detailed summary of the equipment and processing techniques used by NCALM is included in the [Data Collection & Processing Summary](#).

**Area of Interest:**



**Location of survey polygons (in red), aircraft trajectories, and GNSS reference stations**

The requested survey areas consisted of a 1 Km wide corridor along the length of a section of Diamond Fork River covering a total area of 40 km<sup>2</sup>.