Airborne LiDAR Lays Foundation for Oklahoma Energy Project

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An aerial 3D visualization generated from LiDAR data, showcasing exposed sand bars and high banks of the North Canadian River as it meanders through the landscape.

Blew & Associates completed an airborne LiDAR survey of approximately 400 acres near Shawnee, Oklahoma, in support of a large-scale energy development project. The goal was to create a comprehensive existing conditions dataset that could be used throughout the full life cycle of the project, from preliminary planning and engineering through construction and future site management.

Data acquisition was performed using Blew & Associates' newly acquired Phoenix LiDAR Systems RANGER-U240, an NDAA-compliant lidar sensor, paired with an iXM-GS120 mapping camera mounted on a fixed-wing aircraft. Flights were conducted at approximately 800 to 1,000 feet above ground level, allowing the team to efficiently collect high-density data across the entire project area.

Airborne LiDAR was selected because it provided significantly better coverage, faster turnaround times, and lower overall costs compared with conventional ground-based survey methods for a site of this size. The technology allowed Blew & Associates to rapidly capture a complete representation of the site while maintaining the level of detail necessary for engineering and development purposes.

Following acquisition, the Blew & Associates team processed the LiDAR data using Phoenix LiDAR SpatialExplorer. TopoDOT was used to create topographic surface models and detailed planimetric mapping—including roads, drainage features, fence lines, buildings, vegetation limits, and other site features required for design and planning. Blew & Associates also developed a tree height model from the LiDAR data, providing additional information that can be used for site analysis and future development decisions.

Aerial 3D visualization generated from LiDAR data, showcasing a bird's-eye view of the vast coverage and level of detail that Blew and Associates can capture with the Phoenix RANGER-U240 sensor.

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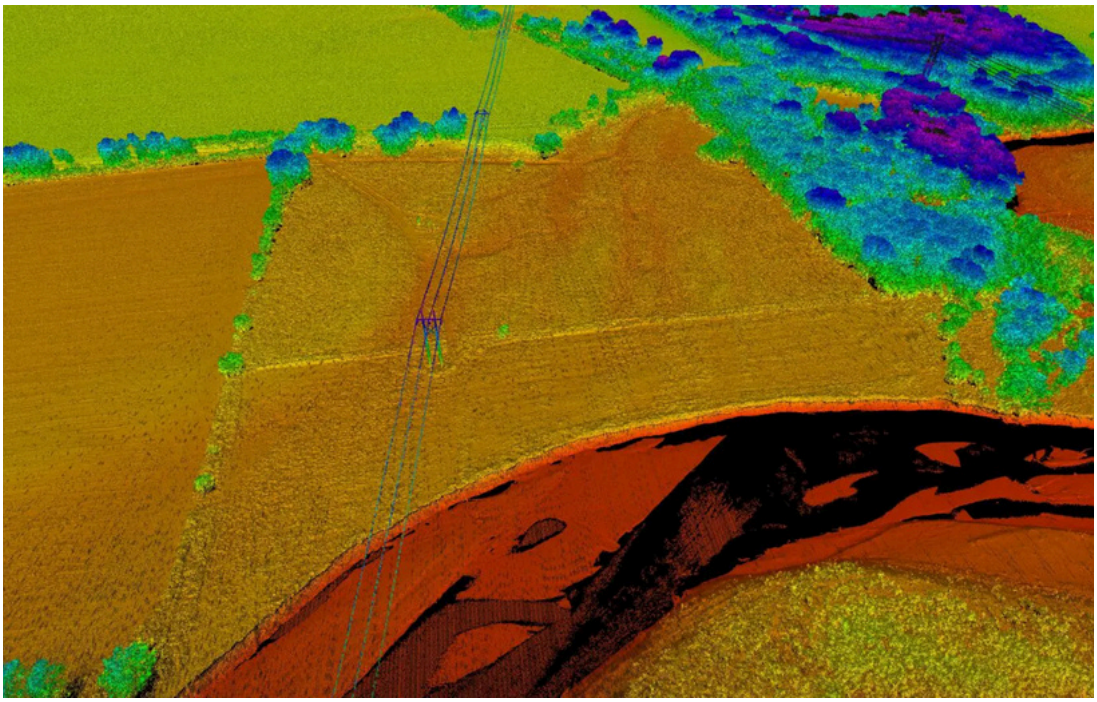
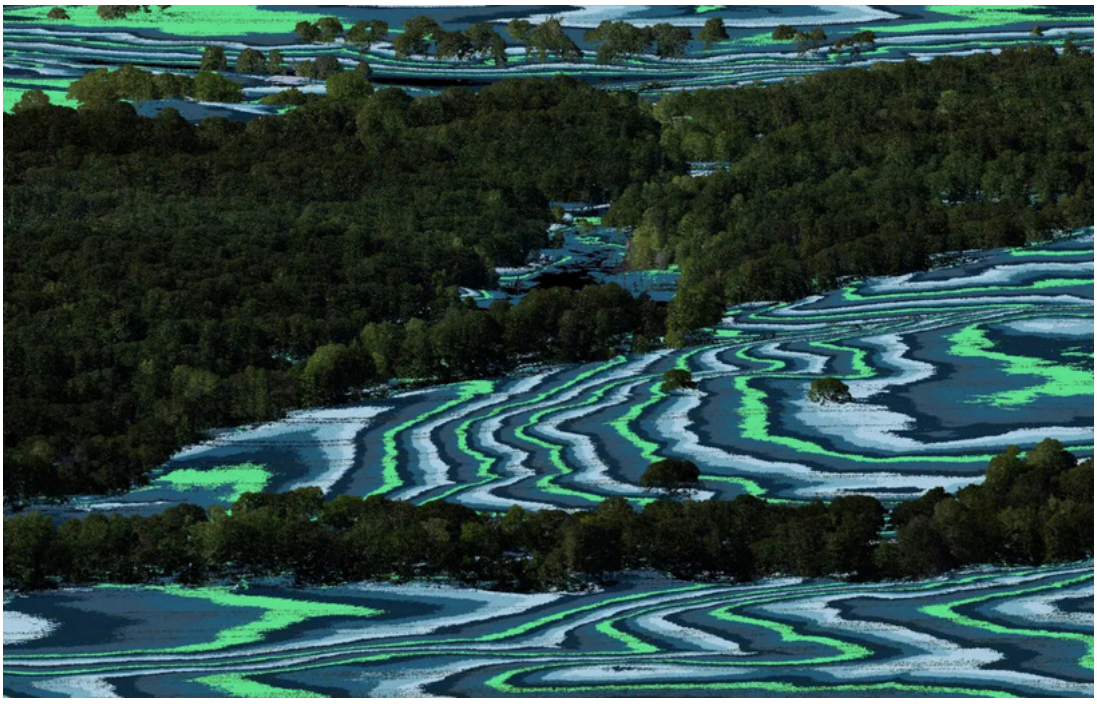
One of the most valuable aspects of this project was the ability to create a highly detailed baseline dataset that will continue to be referenced as the project progresses. Rather than serving a single purpose, the data will support multiple disciplines and project phases, making it a long-term asset for the client.



An elevation-colored gradient of the LiDAR data captured during the flight, showcasing how small details such as overhead power lines and low vegetation are visible in the data.

The project also represents an important step in the continued expansion of Blew & Associates' reality capture capabilities. The firm has long provided terrestrial LiDAR scanning, mobile mapping, BIM modeling, Subsurface Utility Engineering, and traditional land surveying services. The addition of the Phoenix airborne LiDAR system allows Blew & Associates to bridge the gap between large-scale aerial mapping and detailed ground-based data collection, providing clients with a complete geospatial solution from regional site development down to individual infrastructure assets. By bringing airborne LiDAR capabilities in-house, Blew & Associates can offer greater flexibility, faster project delivery, and a seamless workflow from data acquisition through processing, extraction, and final deliverables.



A visualization of all ground points from the LiDAR data recolored to show the topography of the project with a 1′ contour interval.