

GIS: CASE STUDY

Based in Lincoln, Nebraska, Cornerstone Mapping is a small aerial survey and mapping organization, prominent in the geomatics community for providing specialized geospatial image data. The company was formed in 2002 with a mandate to provide high-resolution digital imaging for integration with the burgeoning GIS community in the company's home state. With a multi-task-oriented staff, the company successfully undertakes a variety of projects, from corridor mapping, to environmental assessment, to location-specific image acquisition, operating a single-engine Cessna 182 equipped with a turnkey DSS Digital Sensor System.

CHALLENGE

In the spring of 2005, the company was tasked with generating accurate, orthorectified digital imagery for Lancaster County, and for the cities of Norfolk, Grand Island, Hastings, Kearney, and Lincoln. The imagery was required by several of the cities' public works departments, engineering and county assessors' offices, as well as the Lincoln Police Department and Lincoln Electric System. Two different image scales would be required, six inch resolution for the cities, to enable planimetric, hydrographic and infrastructure

details to be easily identified, and one foot resolution for the county.

SOLUTION

To meet the project's specific requirements, Cornerstone Mapping used the DSS, designed for accurate, high-resolution image acquisition. The company had been using a similar imaging technology with a GPS/IMU configuration which had worked very well for the projects previously undertaken. However, expanding into applications requiring better horizontal and vertical accuracies required a system that could deliver a much improved product. The DSS system's accurate radiometry and medium-format digital imaging capability proved the ideal technology for these types of projects.

CLIENT: CORNERSTONE MAPPING, INC.



RESULT

With the requirement for leaf-off imagery the timelines were tight, but with the all-digital approach to image acquisition, data processing and final product delivery, the project was successfully completed within the scheduled timeframe. The imagery was captured over a five week period, April through early May, allowing

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the orthophotos to be delivered progressively, and in the clients' hands by the end of June. All the cities were flown with a 45% forward lap except for Hastings, which required stereo coverage and a corresponding 60% overlap for photogrammetric data capture generating 2' contour information. The DSS system's direct georeferencing capability was a key component in the rapid data turnaround, being able to quickly generate the orthophotos required.

The versatility of the digital imagery and its compatibility with the various GIS systems utilizing the data became readily apparent, with the multiple applications required from a single project. Power line planning and analysis, Public Works municipal planning, in-cruiser imaging technology for the police department's mobile crime unit, and the City of Lincoln's web page, all used the DSS image data for their specific applications.

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"I do all the flying for the company and the pilot-only capability of the DSS has proved to be very efficient and cost-effective."

Aaron Schepers, Owner and Company President.

