

Experience in the Field

Jackson County, Mississippi

DIGITAL ORTHOPHOTOGRAPHY

With high levels of growth in recent years and increasing service demands, Jackson County, Mississippi, has launched an initiative to update its GIS data. As part of the updating process, the County selected James W. Sewall Company in 2005 to produce new color digital orthophotography as a key base layer. Using airborne GPS and inertial measurement unit (IMU) technologies, Sewall captured new aerial photography in the spring and updated the County's existing digital terrain model (DTM) to develop orthophotography of the entire County footprint, an area of 731 square miles. Professional land surveyors aided in the targeting and collection of survey control.



Color digital orthophotography (1"=100' scale) showing areas of variable land use density, Jackson County, Mississippi.

To ensure the orthophotography was suitable for the variable land use density in the County, Sewall flew the project area at three different photography scales (1"=3200', 1"=1200', and 1"=600') and applied a combination of IMU, airborne GPS, and softcopy aerial triangulation at the appropriate scales to update the existing DTM. This innovative approach enabled the County to balance high-accuracy requirements with significantly lowered costs.

Immediately following completion of the aerial photography phase, the film was developed and scanned, with samples provided to the County for approval. In the next phase, Sewall utilized IMU data to update the existing DTM for developing 1"=400'- and 1"=200'-scale orthophotography. For urban areas with greater density, Sewall used an airborne GPS-aerial triangulation solution for the DTM updating and development of 1"=100' scale orthophotography. Project deliverables included two complete sets of color digital orthophotos (.TIF and .TFW files and a MrSID compressed file), updated DTMs, ground control data in ArcView, the scanned negatives, and metadata files.

This orthophotography project follows a successful project Sewall completed in 2000 to convert the County's existing tax parcel maps to ArcInfo digital format for use in its GIS. On that project, Sewall utilized existing black-and-white orthophotography together with planimetric features captured from the

PROJECT PROFILE

Services

Digital Orthophotography

Client

Jackson County, Mississippi

Size

731 square miles

Project Duration

8 months

Completion Date

September 2005

aerial photography as an accurate base. During the conversion process, Sewall used lines of occupation to maintain shapes, sizes, and integrity of existing parcels to create a 100-percent fit within project tolerances. In an automated process, Sewall also linked existing Bluewater data sets with selected graphic objects. At project closure, Sewall delivered topologically structured digital data sets in ArcInfo.



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