



Florida Department of Transportation Research

Geographic Information System (GIS) Research - Image Acquisition and Processing

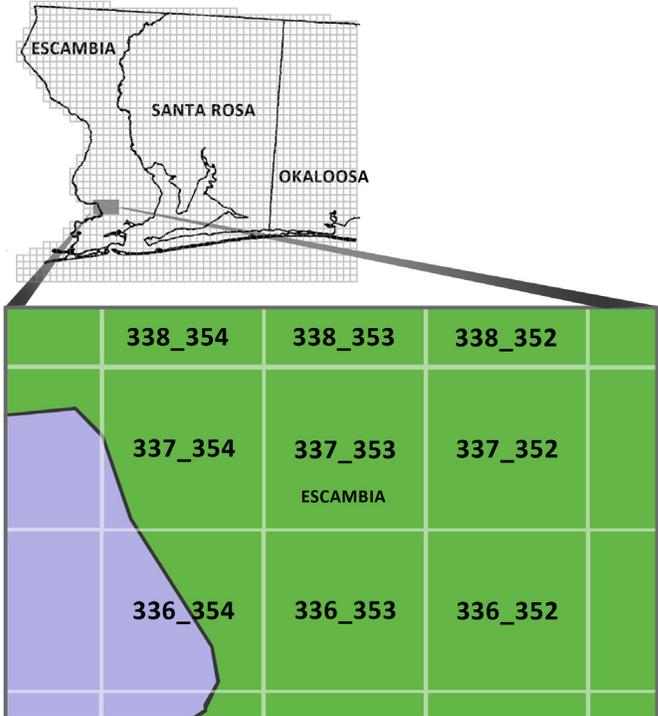
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In this project, researchers at Florida State University were contracted by the Florida Department of Transportation (FDOT) to locate high-resolution aerial imagery that could be integrated into the state's official GIS basemap. The basemap is an ArcInfo (ESRI, Inc.) coverage of the state's highway system and is a geographical representation of the roads maintained in the FDOT Roadway Characteristics Inventory (RCI). The basemap is modified daily by the FDOT Statistics Office's GIS Support Section using high-resolution (one meter or better) imagery provided by previous research projects.

The GIS basemap is essential for planning transportation infrastructure in Florida, and state law requires that new imagery must be acquired and incorporated into the basemap every three years. There is no dedicated state program for acquiring this imagery, which is taken by many other agencies and groups for a variety of purposes. Imagery which meets standards set by the FDOT Statistics Office are sought out and incorporated into the basemap. Florida's 67 counties are on a staggered, three-year update schedule. Researchers obtained this schedule from the Florida Department of Revenue, and used it as the basis of their work plan.

Only true color imagery was considered for this project. Several state departments were contacted, and many of them had image data sets, but most of this material did not meet the criteria of the project, e.g., it did not completely cover a county or it was not ortho-rectified. All vendors supplying data for this project used the state of Florida's standards regarding LIDAR and reference grids; these standards allow the use of routines that have been developed over a period of years.

Data were located for 34 counties. Images taken at greater resolution than one foot were reprocessed to one-foot resolution to reduce processing load and time. High-resolution aerial



For the purposes of the official GIS basemap, the state of Florida is covered by a 2000-meter grid as shown in this graphic. The numbering system uniquely identifies each section.

photographs of Florida counties were re-projected to UTM Zone 17 using North American datum for 1983 and clipped to a 2000-meter grid. The final product was a jpeg image with 25% compression and second-order standard deviation stretch.

As imagery for the GIS basemap is collected by a wider variety of entities, it is important to ensure that it is collected in a consistent manner and handled according to agreed-upon standards throughout its processing. To this end, the researchers developed a draft document, based on their work in this project, that can guide organizations with the management of orthophotography acquisition projects.