

■ ENGINEERING ■ ARCHITECTURE ■ DESIGN-BUILD ■ GEOSPATIAL SOLUTIONS ■ SURVEYING

Merrick & Company was awarded an Indefinite Delivery Indefinite Quantity contract in August 2007 by the Department of the Interior GovWorks Office. The first task order was to collect LiDAR and Digital imagery for 2,289 sm around Lake Okeechobee. The LiDAR and imagery support the creation of updated inundation maps for Herbert Hoover Dike breach analyses and associated hydrologic and hydraulic modeling by the US Army Corps of Engineers (USACE). It also supports the State of Florida and affected Counties in emergency action planning.

This project is the result of a multi-agency collaborate effort between the Federal Emergency Management Agency (FEMA), USACE, the South Florida Water Management District (SFWMD), and the Florida Division of Emergency Management (FDEM). The Herbert Hoover Dike project area is very flat with the majority of the landcover in crops with small areas of wetlands, pasture, and orchards. The area has been heavenly ditched and has many canals. The dominate geographic feature is Lake Okeechobee and the Herbert Hoover Dike that goes around the lake. Herbert Hoover Dike, built in the 1930s, is approximately 140 miles in length and surrounds Lake Okeechobee in south Florida.

Merrick acquired 1m GSD LiDAR and 1 ft natural color orthoimagery for the entire project. The LiDAR data was filtered to bareearth. Hydrographic breaklines were compiled and with the bareearth LiDAR points, a digital terrain model (DTM) was developed that meets 9.25 cm vertical accuracy. Breaklines were collected for all significant hydrographic features and cut through culverts and bridges to allow accurate modeling of the hydrology of the project area.

Merrick hired the survey company of Gustin, Cothorn, & Tucker, Inc. of Niceville, Florida to collect the QA/QC GPS survey points to test the accuracy of the LiDAR data. Over 500 ground control points were collected per four land cover types as required by FEMA and FDEM. Merrick also hired Digital Aerial Solutions (DAS) of Tampa, Florida to collect the 1 ft, natural color imagery via ADS40 digital camera.

Merrick provided the following services:

- LiDAR and ADS40 digital imagery acquisition
- Bare earth filtering of the LiDAR data, collected at 4 ft
- LiDAR classified to bare-earth, water, and above-ground features and delivered in ASPRS .LAS format
- Hydrographic breaklines of all significant hydrographic features including bridges and culverts delivered in geodatabase format
- Road breaklines delivered in geodatabase format
- One and two foot contours delivered in geodatabase format
- One foot color orthoimagery in GeoTiff and ER Mapper .ecw format
- Over 500 survey control points divided into four land cover classes
- FGDC-compliant geospatial metadata
- Project report in Adobe .pdf format including ground control, LiDAR, orthophotography, and LiDAR processes, and accuracy report

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