Helping Weakley County, Tennessee's Tactical GIS Team Maximize their LiDAR ROI

Location:	Eight Counties in Northwest Tennessee
Firm:	Atlantic, Huntsville, Alabama
Client:	Weakley County, TN E911

Weakley County E911 established a specific data need for planimetric building outlines. Without a recent orthophoto basemap, they asked Atlantic to develop an innovative approach to extract the required data from LiDAR data that were provided to them from a 5,500 mi2 USDA-NRCS project in Western Tennessee.

Atlantic's willingness to take on this customized scope while facing a limited budget and an extremely sensitive timeframe required flexibility and a 'can do' mindset. Atlantic developed new scripting tools that were, by necessity, low on manual effort to ultimately develop this dataset. The resultant building footprints from Atlantic's innovative process have the detail, sharpness and appearance of photogrammetrically-derived features. Atlantic's process helped Weakley County 911 maximize their ROI from this new LiDAR dataset.

Atlantic aligned with the County 911's GIS Specialist to assist and propose options of deliverables that would ultimately enhance the Intelligence Packages requested by Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF). 2,822 LiDAR tiles were developed across Weakley County and parts of 7 other counties. Atlantic developed 25,245 buildings that proved critical to Weakley County 911 and the ATF. The 3-D buildings were used in a series of coordinated raids by law enforcement resulting in 45 indictments.

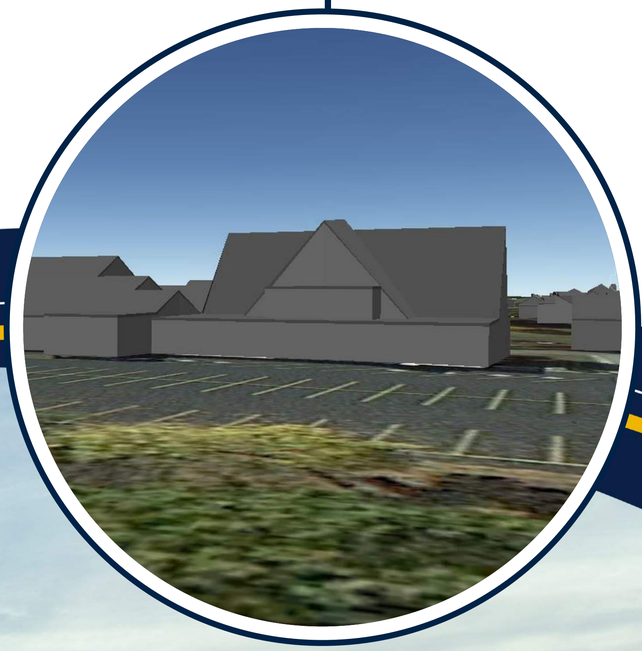
The USGS 3DEP program will deliver high resolution LiDAR data to thousands of new users across the United States. It is imperative for the geospatial community to modify our tools and techniques to help clients maximize their ROI from a LiDAR basemap.

Atlantic determined that properly classifying individual LiDAR points as buildings, prior to the vector extraction process to create the building outlines, was a key component to ensuring the quality of the data.

Resultant building outlines overlaid on the LiDAR intensity. The building outlines have the detail and smoothness of photogrammetrically-derived features.

Atlantic extruded the 3-D buildings using a combination of the final footprints and LiDAR point cloud. The 3-D buildings were delivered as a Google Earth mash-up for easy use by law enforcement officials.

Individual 3-D building detail overlaid on Google Earth. This type of perspective was key to situational awareness for the law enforcement teams prior to their coordinated raids.



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