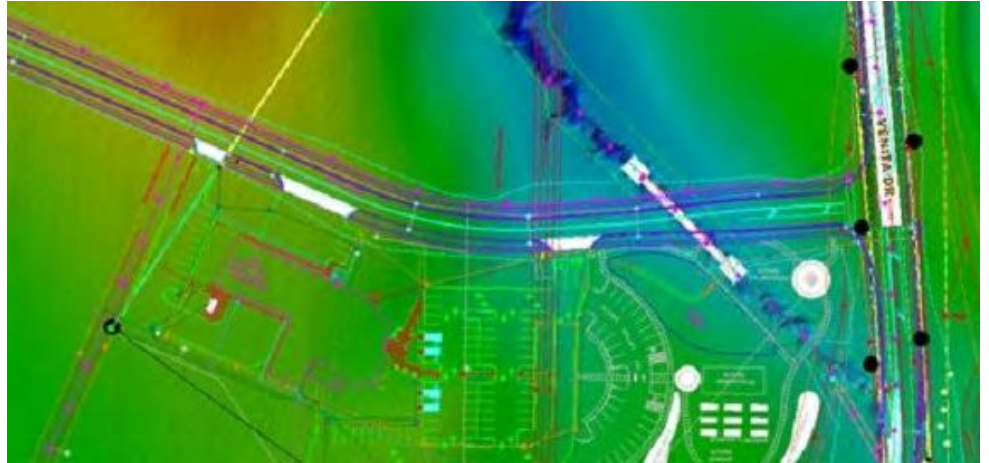


# LET'S TALK BUSINESS

## How Does Aerial LiDAR Benefit the City of O'Fallon?

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Light Detection and Ranging (LiDAR) is a remote sensing method that uses laser pulses to measure the distance from an aircraft to the ground, resulting in a collection of points that can be used to create 3D images of a selected area. These 3D images can be used for engineering, community, and IT planning.



In 2012, the City of O'Fallon commissioned VerticalGeo to collect LiDAR over the city boundaries in order to help with the planning of the new railroad overpass near the Fire Headquarters and the O'Fallon Family Sports Park. The LiDAR data's main purpose was to assess the working likelihood of the Emergency 911 data communication system from the New Fire Headquarters.

While LiDAR can be expensive to collect and process, having multiple projects helps the overall cost associated with the LiDAR. When the City of O'Fallon commissioned the LiDAR, they planned ahead so they would get every penny out of their expense for the LiDAR. They planned several projects they could use the LiDAR on. The City of O'Fallon was able to use the LiDAR data to better model their storm water sewer system. The LiDAR was used to assess how much water the ditches on the sides of the roads could maintain and to model storm water run-off.

LiDAR also allowed for a better understanding of cemetery markers and their locations. The LiDAR allowed the city to find all headstones in the cemetery, especially the relatively flat headstones that were hard to see on aerial photography, instead of on-site GPS field collections, saving the city both time and money.

A few years after the LiDAR was taken, the city decided to add air fiber optic networks for communication between various city buildings. One benefit of LiDAR is a line of sight analysis. The user can select the beginning and end point and see everything that is in between those two points. In order for an air fiber optic network to work, the direct line between the two sensors must be free of all obstructions, including other buildings, ballpark lights, and trees. The LiDAR was used to assess the ability of the air fiber optic networks to work by using the line of sight between proposed air fiber optic locations. This saved time and money by finding out which buildings had a direct line of sight so they did not have to use trial and error by placing the equipment and then later having to move the equipment to a different location.



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In sum, LiDAR, as well as aerial photography, can be used for a variety of different uses. We have provided aerial photography of downtown O'Fallon and the cemetery, LiDAR, and UAV imagery of cemetery and Hesse Park to the city. If you are ever in need of aerial photography, UAV photography, or LiDAR feel free to email VerticalGeo at [Bethany.Marshall@verticalgeo.com](mailto:Bethany.Marshall@verticalgeo.com).