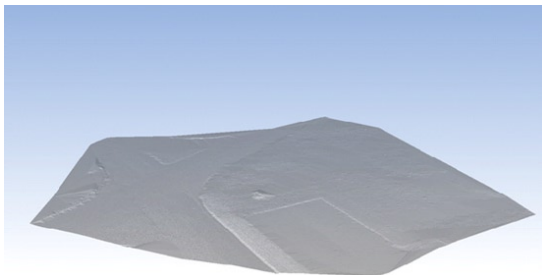
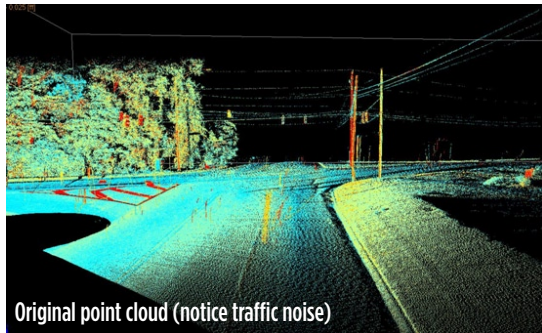


# Transportation Application

Earl Dudley, Inc. Models Roadway Intersection Using EdgeWise™



Clean TIN surface automatically extracted by EdgeWise™

## Goal:

- Create ground surface model for road intersection

## Project Facts:

- Topcon GLS-1000 scanner
- Scan time: 20 minutes

## EdgeWise™ Benefits:

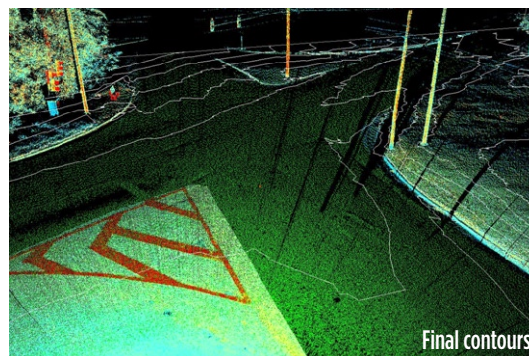
- Reduced modeling time from ~3-5 hours down to 15 minutes
- More accurate surface than could reasonably be achieved manually
- 12-20X modeling savings

**Overview:** As a survey equipment supplier, Earl Dudley, Inc. is constantly searching for new technology to improve workflow efficiency. A number of their potential laser scanning clients are interested in topographic surveys, and so they decided to try EdgeWise™ to see if it could save time in processing ground surfaces. To test this, they used a Topcon scanner to capture data of a roadway intersection, and then used EdgeWise™ to extract a surface model.

**Earl Dudley Company Overview:** Since 1938 Earl Dudley Inc has been a new technology innovator in the surveying instrument community. 3D laser scanning and its accompanying software is one of the cutting edge solutions they believe will continue to provide innovative solutions for surveying and engineering customers. Earl Dudley Inc. provides sales, rentals, repairs and training. For more information, visit [www.earldudley.com](http://www.earldudley.com).

**Field work:** A Topcon GLS-1000 3D laser scanner was set up on the corner of an intersection. It was configured to collect a 190 degree sector of an intersection at a point density of 0.05 ft at 250 ft from the scanner. A full set of high resolution pictures was captured first, and then the area was scanned. The field work took approximately 20 minutes.

*“EdgeWise™ greatly facilitates the clean up process of removing unwanted point cloud data for civil-survey projects. The software can easily and efficiently handle multiple scanner setups in a snap.”* - Adam Arrington



**Point Cloud Processing:** Topcon's ScanMaster software was used to download the data from the scanner, color the points, and export them to a format readable by EdgeWise™. After adjusting a few parameters to match conditions at the job site, the automated tools within EdgeWise™ were used to extract ground-only

points from the scan. After all the unwanted trees, power poles, bushes, traffic noise, etc. were removed from the point cloud, a TIN surface was produced. Lastly, the TIN surface and the extracted ground points were brought back into ScanMaster, where final 6-inch contours were generated. The entire process (all the way to finished contours) took approximately 15 minutes. It was estimated by the principal investigator that conventional editing of the point cloud would have taken between 3 and 5 hours, depending on skill level, and would likely not have included the level of detail provided by the EdgeWise™ results.

**Conclusion:** EdgeWise™ proved to be an effective and accurate tool for producing a topographic surface model. Many different civil-survey clients of Earl Dudley, Inc. could utilize the combination of laser-scanning and EdgeWise™ to produce more detailed, accurate, and cost-effective surface models than they are currently producing with traditional surveying techniques. For more information on this project: Adam Arrington - VP, Earl Dudley, Inc. • (800) 633-6457 • [adam@earldudley.com](mailto:adam@earldudley.com)



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