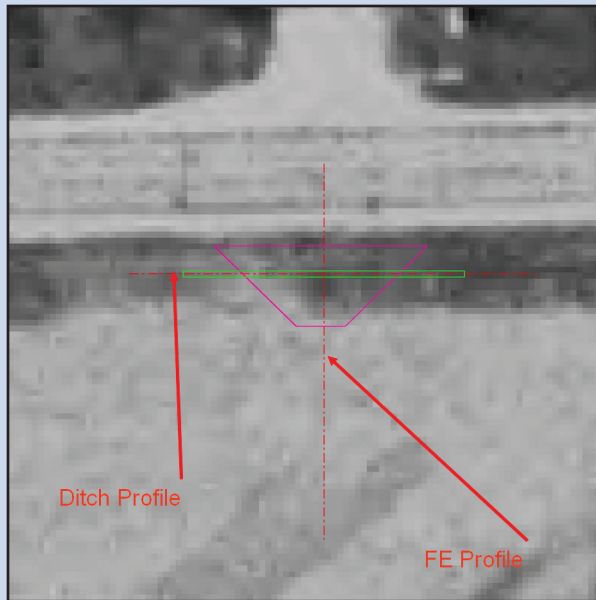


# Illinois Height Modernization Program

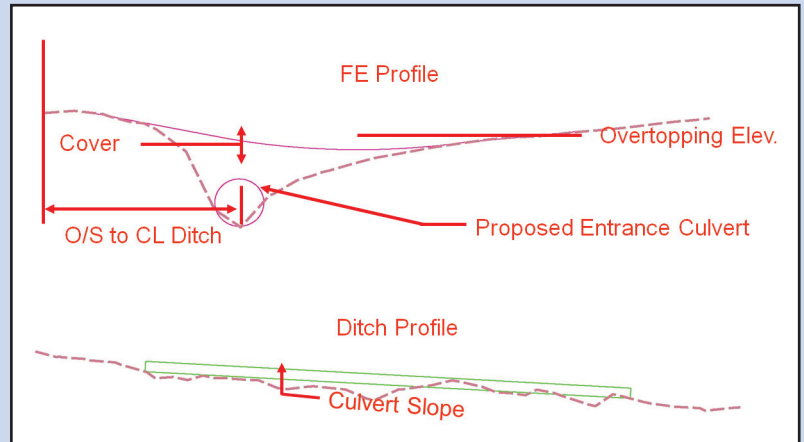
## LiDAR Data Applications

### Improving Illinois Highways

Michael Blumhoff



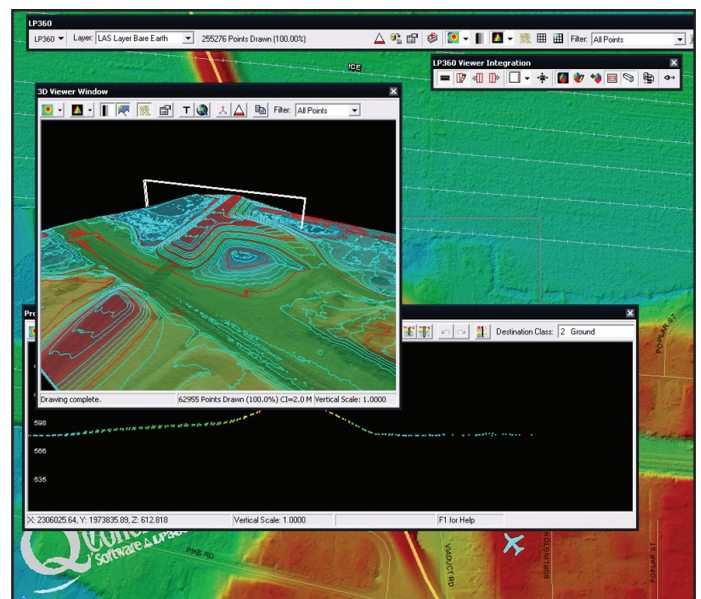
1) Sizing culverts to appropriate water capacity.



2) Water storage routing with culverts and roadside ditches.

The Illinois Department of Transportation (IDOT) has responsibility for planning, construction and maintenance of Illinois' extensive transportation network, which encompasses, highways and bridges, airports, public transit, rail freight and rail passenger systems. The Division of Highways and its nine district offices are responsible for the design, construction, operation and maintenance of the state highway system.

IDOT has recently begun to employ LiDAR data to supplement traditional route surveys and to analyze delineations of flood easements, drainage areas, roadside ditches, and sizing of culverts (Figure 1). LiDAR data applications have allowed IDOT to generate highly-detailed digital elevation models and 1-foot contour lines (Fig. 2) and accurately reduce peak water storage requirements (Fig. 3) and water flow estimates in some cases. This has resulted cost-saving measures to either reduce proposed culvert sizes or increasing water capacity to double, or even triple, former load rates for small existing culverts which have no history of significant flooding.



3) Digital elevation models and 1-foot contour lines for a bridge crossing in Carroll County, Illinois.

For Additional Information:  
[www.dot.state.il.us](http://www.dot.state.il.us)