WestLAND Group, Inc.

■ **Company**
WestLAND Group Inc. – founded in 1999, WestLAND is a well-established civil engineering and land surveying company that specializes in land planning, civil engineering, storm water, management public improvements and GIS/Mapping throughout the state of California, serving many municipal agencies and the public utility industry. www.westlandgroup.net

■ **Location**
Based in Rancho Cucamonga, California

■ **Equipment**
Hardware
Leica Nova MS50 MultiStation
**Software**
Leica Infinity

■ **Challenge**
• To create accurate, fast and cost-effective deliverables for the end customer
• To expand company services into a new range of scanning applications

3D laser scanners are big investments, and WestLAND Group, Inc., founded in 2000 in Rancho Cucamonga, California, spent years looking for the right instrument. The company had a definite need; the work they do for railroads, which often calls for clearance surveys around tunnels and bridges, and point clouds and cloud-based models are ideal for this.

A month after WestLAND received the Nova MS50 MultiStation, one of their customers J.L. Patterson & Associates (JLP), a rail-specialised engineering company, came to WestLAND and requested ground control for a mobile LIDAR survey. Sophisticated users of 3D geospatial data, JLP wanted WestLAND to set control along and within several railroad tunnels near the Mexican border, with someone else doing the LIDAR work. JLP was used to working with point clouds, but didn't necessarily think of WestLAND when it came to 3D laser scanning. WestLAND suggested they not only provide control, but also scan one tunnel, and see if the deliverable worked and was cost-effective for JLP. The offer was accepted, and WestLAND got to work.

The deliverable was ultimately for Pacific Imperial Railroad (PIR) on a section of rail known as "The Impossible Railroad." PIR is rehabilitating the Impossible Railroad for use with double stacked trains, a total of 17 tunnels will have to be surveyed for clearance analysis and possible grading and track redesign.
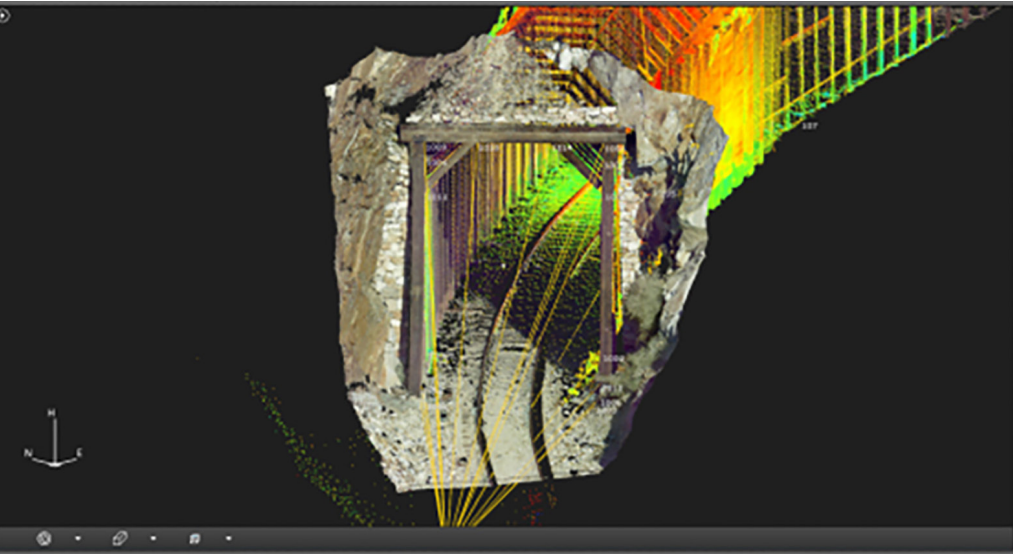
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WestLAND saw the scan of one tunnel as basically a marketing investment and offered to scan one of the smaller tunnels, No. 15, which was only 300 feet long. It was the first project to make use of the MultiStation and it went very well. While traversing the tunnel with the Nova MS50 for the control survey, the equipment was switched to scan mode and after a few setups, immediately started scanning. The entire tunnel took only a few more hours to scan and also gave the engineers time to clean up notes and sketches, and take pictures of the site to supplement the MultiStation's images.

Leica Infinity, the software used to process the collected data, has become invaluable to WestLAND engineers. The ability to import and view the raw survey and scan data so easily has quickly convinced them. WestLAND was also impressed by the ease of doing control traverse network adjustments for precision, using conventional survey points and point cloud data. This data could then be easily exported into multiple file formats and imported directly into MicroStation, AutoCAD Civil 3D, and/or Revit, depending on the application and required deliverables. The suggestion of using the Leica Nova MS50 MultiStation to scan the JLP tunnel for producing working, cost-effective deliverables appears to become, in all probably, a very profitable proposal for WestLAND. The data collected from the original pilot project tunnel has turned into a further proposal to JLP for the remaining 16 tunnels. Given the satisfaction of JLP's end customer, WestLAND expects that the additional tunnel proposal to be accepted and looks forward to using the MultiStation on future projects.

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