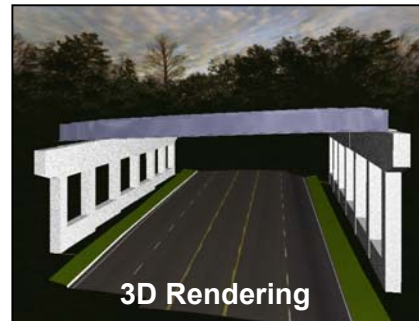
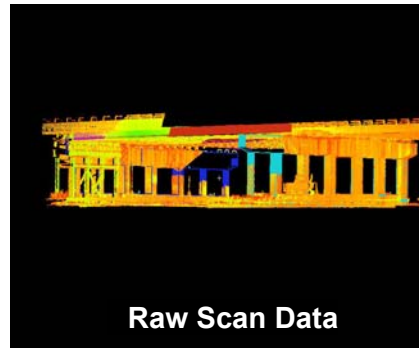

I-695 / Route 1



Client/Owner: MD State Highway Administration

Project Location: Arbutus, MD

GPI introduced Maryland State Highways to an innovative procedure for collecting bridge as-built data. MDSHA proposed a pilot study of an existing structure that was conventionally surveyed by GPI a few years earlier. GPI had also, under a previous contract, performed precision mapping using a helicopter platform to provide survey grade data for the bridge deck and roadway surfaces from aerial photography. This combination of data made this bridge a perfect project for a pilot study.

The I-695 bridge over Leeds Avenue was chosen because of the issues and challenges that this structure provides for a comparison. The bridge has multiple spans and carries I-695 over Leeds Avenue, Route 1 and the Amtrak high speed rail. This survey's issues/challenges included permitting for Amtrak, traffic control and height of structure. Any one of which requires time and money expended over and above the cost to perform the actual survey. The height of some of the piers required extendable boom trucks. This combination of difficult field conditions allowed GPI to demonstrate to Maryland State Highways the potential of 3D Laser Scanning and how it solves day to day conventional survey challenges.

GPI surveyed the span over Route 1 using 3D Laser Scanning without having to use any traffic control or gain access to the Amtrak Right of Way. The raw scan data was acquired in 100' – 200' sections and was then tied together and registered to Maryland State Plane co-ordinates. The data as processed to provide a complete 3D model for the area. To verify the completeness and accuracy of the data derived from the 3D Laser Scanning quality control checks were performed where common elements between the original survey and the subsequent 3D Laser Scanning data had their positional accuracy checked. The data was consistently within the required project parameters for a survey of this nature.

Completion Date: 2002