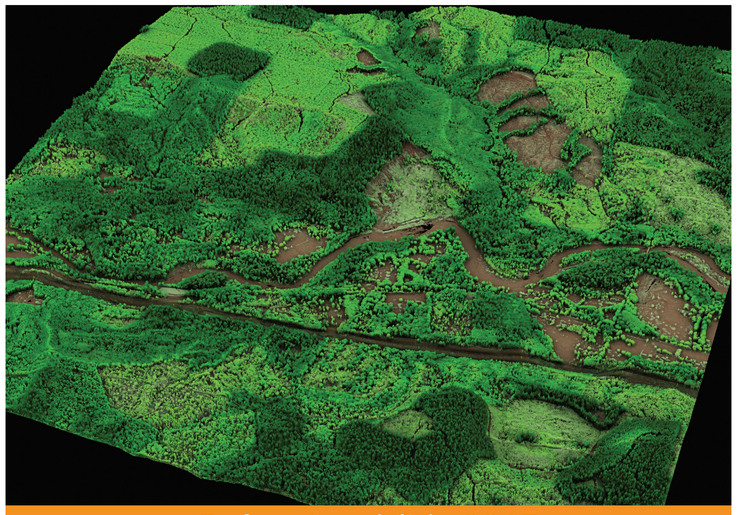
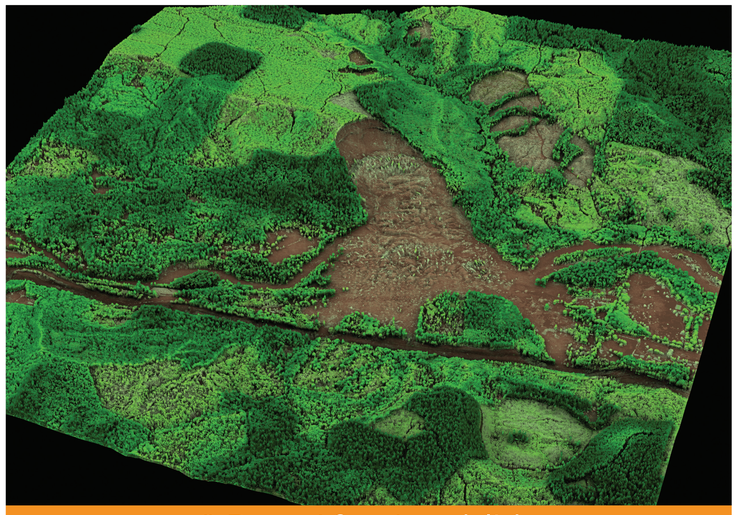
LiDAR PROVIDES CRITICAL DATA FOR
OSO LANDSLIDE

On March 22, 2014 one of the deadliest landslides in US history took place in Snohomish County, Washington. The Oso landslide took 43 lives, engulfed 49 homes, and dammed the Stillaguamish River.

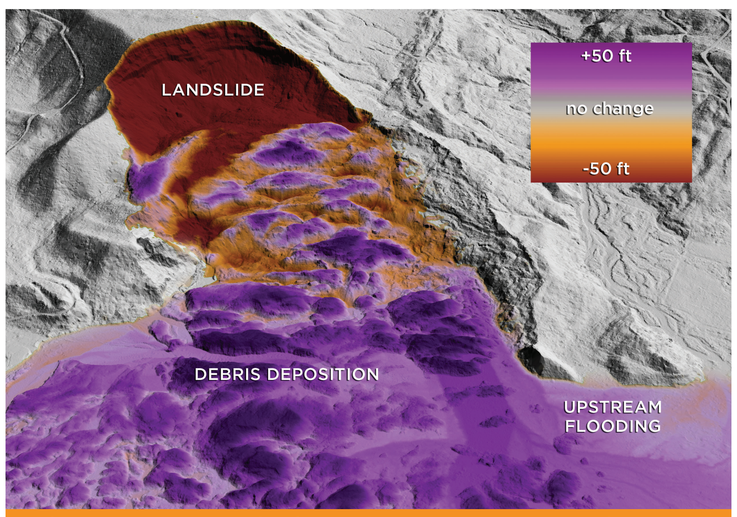
Buildings Lost (in white)



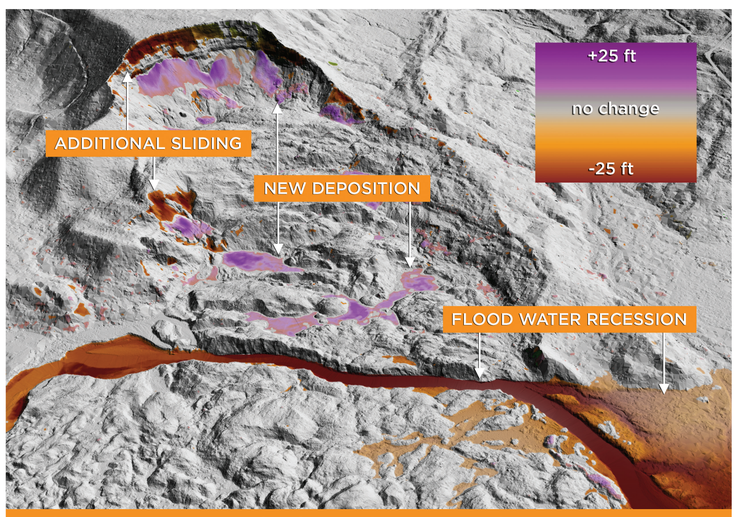
Before Landslide 2013



2 Days After Landslide



Change Ground Elevation 2013 – March 2014



Change Ground Elevation March – June 2014

Within hours of the landslide, Quantum Spatial acquired high density LiDAR data to assist the Washington State DOT and other first responders traverse extremely unstable terrain. In 2013, Quantum Spatial collected LiDAR in the same area for the Puget Sound LiDAR Consortium. We leveraged this with the newly acquired data to provide meaningful change detection analytics and delivered the data within days to stakeholders.

A third collection occurred on June 21, 2014 to map the excavation of debris and any subsidence in the flooding of the Stillaguamish River. We found that the floodwaters had receded substantially, and that a new river channel was emerging.

High-resolution LiDAR can detect geologic surface features associated with unstable ground that goes unnoticed using traditional photography and ground observation methods. Our work demonstrates the value of LiDAR and sophisticated change detection analytics in rapid emergency response, hazard zone mapping, and recovery and mitigation efforts.

MAPPS
Management Association for Private Photogrammetric Surveyors
An Association of Photogrammetry, Mapping, and Geospatial Firms ®

quantum SPATIAL

Washington State Department of Transportation