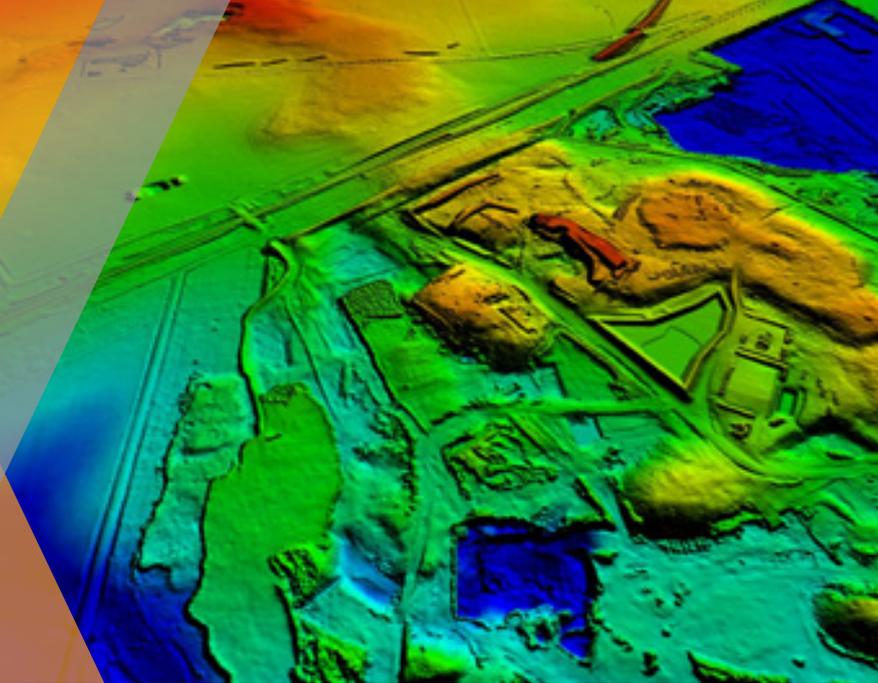


LiDAR and Extractive Industries

Technologies in geological mapping



The Victorian Government is undertaking a statewide program of mapping for extractive industries using LiDAR technology.

What is LiDAR?

Light Detection and Ranging (LiDAR) uses light to make rapid and high accuracy measurements of the distance between the light's point of origin and other surfaces. LiDAR measurements create a dense 'cloud' of points that can be used to generate extremely accurate 3D models of the landscape. LiDAR is especially useful to generate high resolution mapping over large areas, irrespective of dense vegetation or other visual barriers.

LiDAR is becoming an increasingly common tool for land use planning, environmental monitoring and earth resource planning. It is used by many government agencies, as well as the resources, construction and environmental sectors.

How does LiDAR work?

LiDAR surveys can be conducted from an aircraft or drone fitted with a ranging system and highly accurate GPS receiver.

Light pulses are emitted towards the ground, which reflect off surfaces they encounter, such as the ground, vegetation, water and built structures. These reflections and their time of return are recorded by the sensors, enabling the distance from the pulse's origin point and

the reflecting feature to be calculated.

The data is then processed by spatial data specialists, who differentiate between land surface and other features, removing things like vegetation and the built environment to get a clear map of the land's topography.

Victorian LiDAR surveys routinely achieve 'point densities' of over 10 points per square metre, allowing for extremely high-resolution images over large survey areas of several thousand square kilometres.

How does LiDAR contribute to the Extractive Resources Strategy?

LiDAR is being used to generate contemporary geoscience data to contribute to the Extractive Resources Strategy's priority actions.

Detailed study of a land surface can enable remote geological mapping, structural analysis and interpretation.

Detailed LiDAR data for the Wyndham SERA Pilot area identifies a basalt flow running immediately adjacent to the pits of two quarries. This feature is a significant geological indicator of extractive resources in the area.

For more information

To find out more about Victoria's LiDAR surveys including what data is currently available, contact the Department of Environment, Land, Water and Planning's Coordinated Imagery Program at coordinated.imagery@delwp.vic.gov.au.