



**LEVEL
CROSSING
REMOVAL**
AUTHORITY

FRANKSTON LINE

Feature survey

WHAT IS A FEATURE SURVEY?

A feature survey is essential to any construction or infrastructure project as it accurately maps the existing topography - the natural and man-made features of an area. It provides the foundation of the design and is vital in helping us to determine what design options are possible at each of the eight level crossing removal sites along the Frankston line, based on their unique features and terrain.

HOW IS A FEATURE SURVEY CARRIED OUT?

A feature survey involves both site and office-based tasks. On the project site, the surveyors will locate the ground levels and natural features such as trees, slopes, ridges, contours and boundaries like river banks. Man-made features, such as utility services (e.g. telephone poles), drains, buildings and fences are also mapped.

To capture this data, the surveyor will use three main types of equipment starting with a Total Station Theodolite which measures distances and angles. The Total Station is robotic and operated with a remote control so the surveyor isn't required to stand behind the instrument to control it. Additionally, Survey-accurate Global Positioning System (GPS) receiver units are used to establish marks on the site where the surveyor sets up their Total Stations. They are also used to locate natural surfaces such as the tops and toes of riverbanks. Finally, digital levels, which have sub-millimetre precision, are used to accurately measure heights.



Surveyors use the Total Station Theodolite to measure distances and angles.



We are undertaking a range of technical and non-technical investigations, including feature surveys.

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A detailed three-dimensional map of the area is produced using a specialist computer system.

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Back in the office, the data is collated using a specialist computer system to produce a detailed three-dimensional map of the area (see above). This involves joining up features recorded from different positions, or by different surveyors, so that elements, such as driveways and footpaths, are correctly represented. When all of the features are connected and checked for correct locations, a digital terrain model is created. This is a three-dimensional model of the area's surface. Together, the digital terrain model and three-dimensional map provides engineers and designers with an accurate and realistic model that they can work from to develop design options for each site.

For more information on the project, please contact the Frankston Project Team on 1800 762 667 or email contact@levelcrossings.vic.gov.au.

AREAS SURVEYED

A team of 18 surveyors carried out the feature survey from April to June this year. They covered the Frankston rail corridor from Bay Road, Cheltenham to Warrigal Road, Mentone; First Avenue to Berry Avenue, Edithvale; and Glenola Road, Chelsea to Sheridan Avenue, Frankston. This area included the sites of the eight level crossings and other areas which may require additional works, such as signalling equipment.

Image below: A section of the Frankston line rail corridor that was surveyed in Edithvale

