LEVEL CROSSING REMOVAL AUTHORITY

FRANKSTON LINE

Geotechnical investigations

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

To date, the Level Crossing Removal Authority (LXRA) has undertaken initial geotechnical investigations at Charman Road, Cheltenham, Station Street, Carrum and Skye/Overton Road, Frankston. Further geotechnical investigations, including ground water investigations, will begin in August this year with a target of completion by the end of 2016.

WHAT IS A GEOTECHNICAL INVESTIGATION AND WHY IS IT IMPORTANT?

Geotechnical investigations provide important information about the physical properties of soil and rock and the water table at each of the sites. These tests involve boring a hole, taking soil and rock samples and running tests to determine soil strength, composition, water table depths, compressibility and other important characteristics. It is important to understand the ground conditions at each site to design earthworks and foundations for the designs that are under consideration.

"Geotechnical investigations provide important information about the physical properties of soil and rock and the water table."

Removing 50 dangerous and congested level crossings will transform the way people live, work and travel across metropolitan Melbourne and improve safety for drivers and pedestrians.

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Translation service
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Image left: Charman Road in Cheltenham is one of the areas where preliminary geotechnical investigations have taken place.

These investigations assess:

- **Soils -** geotechnical investigations will have sufficient detail to allow us to design the level crossing removal and associated works including the type and bearing capacity of soils and any geotechnical issues including variability in ground conditions.

  Some locations along the Frankston line have been identified as having acid sulphate-rich soils. If they are substantially exposed to the atmosphere and/or altered groundwaters, a chemical reaction may take place. Such reactions can result in environmental pollutants such as sulphuric acid being released into the groundwater, potentially affecting bore water and local ecology.

- **Groundwater -** groundwater systems are complex and dynamic and affect design and construction. Inappropriate construction has the potential to impact local environmental systems and residents' access to useable bore water.

HOW ARE GEOTECHNICAL INVESTIGATIONS CARRIED OUT?

A drill rig is used to drill bore holes and take sample cores of soil and rock. The bore holes measure approximately 100mm in diameter (around the size of a CD) and are drilled to a depth of up to 40m. Core samples are taken and analysed in a laboratory to provide detailed information about existing underground conditions and materials such as soil, rock, clay and sand.

Groundwater monitoring wells are installed in a series of boreholes to allow ongoing monitoring of groundwater levels and samples are taken to determine existing underground water quality which can influence the design.

We also use cone penetrometre testing (CPT) to investigate material properties of the soil, such as its strength.

To date, six bore holes have been drilled at three different sites along the Frankston line and we will be drilling a further 100 bore holes in the next phase of geotechnical testing this year.

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

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