

# CASE STUDY

## JOHNSONVILLE UNDERCUT REPAIR

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## INTRODUCTION

In October 2017, a slip below the Johnsonville rail line in Wellington posed a risk of undercutting the rail corridor. To stabilise the slope and prevent further erosion, Abseil Access was engaged by KiwiRail to install rock bolts and reinforced mesh. The works were designed by Aurecon NZ (Wellington Office) and required careful planning to avoid disrupting rail operations.

## PROCESS

A custom scaffold system was erected to keep all work outside the rail corridor and clear of the overhead traction network, with access provided via a scaffold bridge spanning the stream below. Seventy BluGeo 25mm GRP rock bolts, selected for their corrosion resistance, were installed at 2.5m spacing and to a depth of 8m. Two anchors underwent suitability testing, loaded to 250kN in accordance with BS8081:2015. Casing was used to maintain the 100mm diameter drill holes through loose slip material until rock was reached. Drainage was incorporated through nine sub-horizontal PVC drains at 3m centres. The slope face was then covered with Geofabrics erosion control mesh (MacMatR), reinforced with diagonal 12mm galvanised wire ropes.

## OUTCOME

The six-week project was completed on schedule, meeting all KiwiRail quality assurance and health and safety requirements. The combination of corrosion-resistant anchors, integrated drainage, and reinforced mesh provided a durable solution to protect the rail corridor from further erosion.

