

Kempsey to Armidale Road Recovery



FACT SHEET - Soil nail walls

ARMIDALE
Regional Council

August 2022

www.armidaleregional.nsw.gov.au/kempseyroad

What happened

Heavy rainfall in February and March this year caused significant damage to the 43km Kempsey to Armidale Road, further exacerbating damage from prior natural disasters and causing 10 major landslips.

The main areas of damage currently being worked on are at Waterfall Corner and Flying Fox Cutting.

What are we doing about it?

Work at these two locations is progressing and includes stabilising the ground at the slip sites. This will be done using a technique called 'soil nailing'. This technique involves pinning the soil and vegetation onto rock with long steel nails, steel mesh and a concrete facing.

The work is required to prevent further deterioration of the road and to provide enough strength to allow traffic through. However, there are several sections where part of the road formation has been lost, and restoration of the road to the original width will require further investigation and design. These emergency repair works are expected to be completed by the end of 2022.

Why is this area at risk of landslides?

The ground in this area has a mix of natural geographical foundations that make it unstable. These include layers of sedimentary rock that lie at various angles, intrusions of volcanic rock that penetrate through the sedimentary layers and loose soil from historic landslips.

Soil density and permeability also varies across the site, allowing water to penetrate deep into the ground which, in turn, allows the soil to move, increasing the risk of landslips. There is potential for landslips both on the upper and lower slopes.

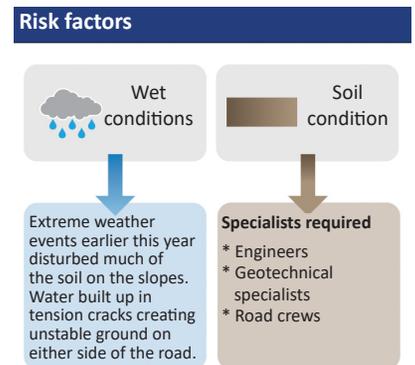
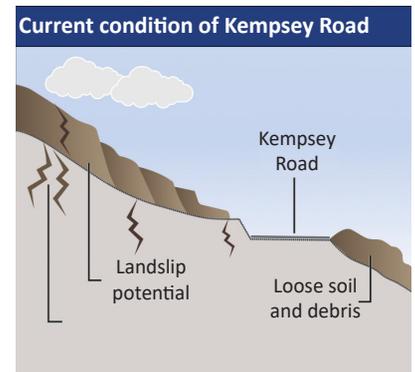
Work risks

Installing the soil nails is difficult because the holes that are drilled to install the steel bars can collapse while they are being drilled. There are also many floating boulders in the material we are drilling through, so the drill head has a tendency to get stuck.

This type of work is very tedious and messy. Drilling is noisy, dusty, and workers are adjacent to the edge of a very high drop, so falls from heights are a big risk. Most of them need to be on fall restraint systems, and some of them need to hang off the face of the slope to do the work.

The drilling method used depends on the road width and stability of the road at the locations. The project has specialist teams on site 'soil nailing' the slope to keep it stable. Sometimes a trapeze suspended by ropes is used or an excavator mounted with a drill head. Both techniques require workers to be suspended on ropes.

Shotcrete, where concrete is sprayed against the slope, will be used in some locations and there may be some use of rock-filled baskets, or gabion baskets.



Contact us:

If you have any questions or would like more information, please contact us on **1300 136 833** (press menu option 1) or email: council@armidale.nsw.gov.au



Soil nail works at Flying Fox Cutting