

1 Mangamuka Gorge slip repairs



Project timeline



Project update

A 13km section of State Highway 1 near Mangamuka Gorge closed in August 2022 for the second time in two years due to 15 significant slips and extensive damage caused by severe weather.

The wet weather throughout 2023 resulted in more slips within the site area, adding complications to existing slip sites and subsequently created an increase in scope that resulted in delays to the initial work programme. The number of slips more than doubled to 35, with 15 deemed as critical.

All of the critical slip sites require a complex engineering solution which take an average of 5-6 months each to repair. This means multiple work sites are operating in parallel in a constrained environment.

The earlier repairs completed during the previous closure in 2021 have held up well and were undamaged, requiring no additional work to be undertaken in these areas.

As part of the repair, we are making the ground less susceptible to slips by improving the drainage through the gorge, so it's better equipped to handle future weather events.

Progress update May 2024

Work is continuing at pace, with three shifts running day and night where possible in order to complete the repairs as efficiently as possible.

We have completed work on 3 of the 15 critical slips and 3 more sites are in the final stages.

Physical works are underway on the remaining 12 critical slip sites.

Work on one of most complex slips (A11) has commenced. This slip is estimated to be approximately 20m deep with the top of the slip being 200m up the hill. Approximately 30,000m³ of material needs to be removed, and the existing road needs to be realigned away from this slip-prone site.

The team has also started with the drainage repairs through the gorge to better manage storm water during larger storm events.

The road is expected to reopen by Christmas 2024.



Slip A5 - Complete!



Slip A26 - UC Piling rig in action.



Slip A27 - Complete!



Slip A3 - Anchors being installed.



Slip A6 - Driving the lagging plates behind the permanent piles.



Slip A6 - Piling during night works.

Caring for wildlife

Protecting and enhancing the environment in which we're working is very important to us and our partners. The Maungataniwha Range is home to a diverse range of native and endangered flora and fauna. We've been working closely with New Zealand Environmental Management and hapū to survey any native or endangered species which may be affected by our work, and relocate them away from our construction sites.

The repairs to Slip A11 require excavations into the Maungataniwha Range. Approximately 30,000m³ of material will need to be removed. This is a significant amount of work, particularly given the logistical challenges of operating in a constrained environment surrounded by multiple other operational sites. Before any machinery was brought onto the site, our specialist team of ecologists, kaitiaki, kiwi dogs and handlers, and arborists carefully cleared the site of vegetation and relocated any wildlife they encountered, ensuring the site was ready for the next phase of work.

Each morning before work started, specially trained dogs searched the site to check for kiwi that may have entered the area overnight. To date, no kiwi have been found.

During the search at Slip A11, the teams discovered and safely relocated multiple different at risk and threatened species including native kauri snails (pupurangi), and several different species of wētā including several rare tusked wētā.

There is also a known presence of long-tailed bats (pekapeka) in the Maungataniwha Range. Automatic Bat Monitors have been set up to measure their high frequency signals through special bat software. During the colder months, the bats are less active while they conserve energy. This puts them at greater risk from any work around their habitat, so any potential roosting areas need to be removed before winter. Any trees that are identified as a potential habitat are carefully inspected before and after felling to ensure that these Nationally Critical species are protected.

As well as the work being done to relocate species from within the site, we have also recently set up a series of stoat and rat traps along the edge the highway as part of the ongoing pest control on site.



Two kiwi dogs, Yagi (pictured) and Pearl, alternated as available to give us an early all clear to work each morning.



A tusked weta found during the checks.



A kauri snail (pupurangi) crossing the road by the worksite.



Progress with the clearing of vegetation and beginning of earthworks on A11 (left photo taken 30 April 2024, right photo taken 14 May 2024). All land and vegetation is carefully checked and wildlife relocated prior to anything being removed.

Mangamuka Gorge project in numbers (February 2023 - April 2024)

People



331,279

site hours



868

total inducted site staff



142

average daily workforce

Companies



141

total companies involved



17

daily average companies onsite



74%

average local workforce onsite

Slips



35

total slips



15

total critical slips



3

critical slips repaired

Piles



1308

total scheduled piles

747 enabling piles, 561 permanent piles



1056

total completed piles

747 enabling piles, 309 permanent piles



23m

average pile depth

12 Month Rainfall (February 2023 - February 2024)

Despite losing 28 days last year due to heavy rain, the project is progressing well. The past year was one of the wettest on record, with well over one metre more rainfall than the historical average in the area. Usually the region gets approximately 1700 millimetres of rain in 12 months - in contrast over the past year there's been over 2800 millimetres of rain.



1712mm

historical average annual rainfall



542mm

rainfall in the wettest month, May 2023



2801mm

total rainfall in past 12 months



34mm

rainfall in the driest month, Feb 2024



72mm/hr

peak rainfall per hour



118.8mm

rainfall on the wettest day, 23 Sept 2023



Keep up to date

To receive progress updates direct to your inbox, visit our website nzta.govt.nz/mangamuka or scan the QR code.

