

CONSTRUCTION UPDATE

Significant archaeological find

In early April a taonga (treasure) was discovered near the Ōkahu inlet north of the Johnstone's Hill Tunnel. The taonga, a partially carved kauri tree around 17 meters long, was uncovered during excavation work in the area. A digger operator identified a wooden object under the surface of the inlet. The team on site are trained in anticipation of a find like this, and work stopped immediately under the Accidental Discovery Protocol. The project's Environmental Manager and onsite archaeologist were notified along with iwi partners Hōkai Nuku and the NZ Transport Agency.

Initial thoughts were that this was a partially completed waka, however Project archaeologist Sarah Phear says that while the 17 metre Kauri tree trunk has been culturally modified, "our original interpretation of the discovery has changed now that we have exposed more of the trunk."

"There is evidence of stones and rocks wedged into the wood to try to split parts off and there are cut edges, but it's not consistent with waka carving. There are branches and logs around and under the trunk that appear to have been placed deliberately, so it was likely being prepped for processing."

"It would have been amazing to find a waka, but we have evidence of processing of Kauri which is not often found. It's really important to date the tree and get core samples to look at pollen counts and the vegetation growing in the area at that time. They're all pieces of the wider archaeological landscape relating to pre-European settlement," says Dr Phear.

The site floods every time the tide comes in so the archaeological investigation, in consultation with project treaty partners Hōkai Nuku, Heritage New Zealand and the Ministry of Culture and Heritage, has been muddy and complex.

Last week the trunk was lifted out of the ground, so archaeologists could study its underside, complete 3D scanning and check the ground where it lay.

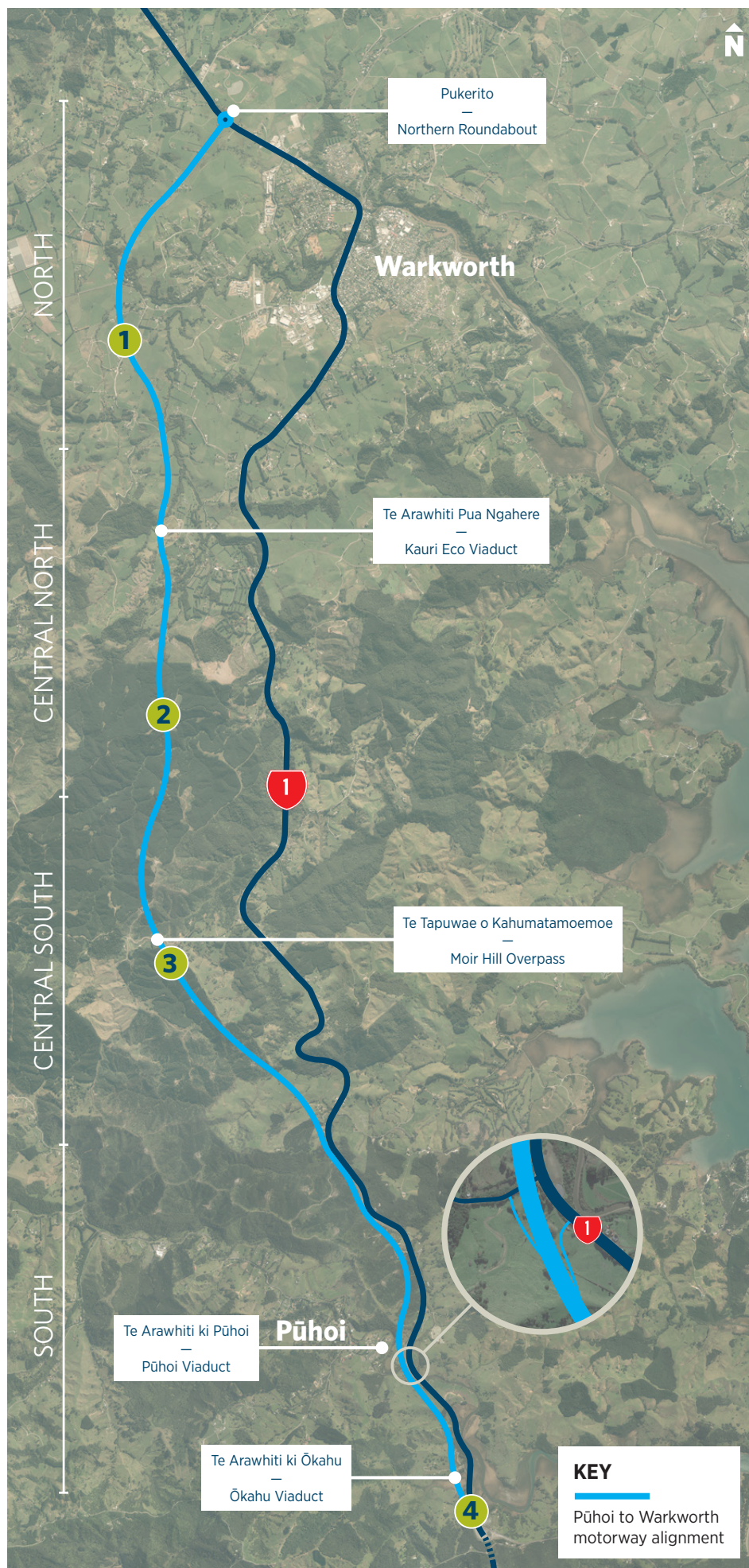
Following consultation with relevant stakeholders, the taonga has been reburied in the trench a metre or two from where it was found and construction in this area has now resumed.



Preparing for the lift



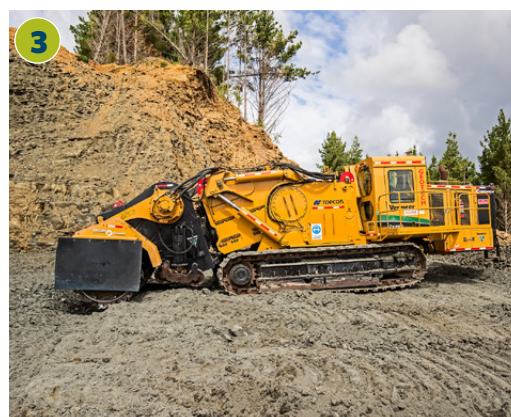
Artefact secured and ready for lifting



North – A rock ripper (earthworks machine) clearing rock in the N3 cut



Central North – CN8A Culvert works



Central South – New piece of plant on site Vermeer Rock milling machine



South – Trees being cleared at the Southern end of the project near the Ōkahu inlet



MEET THE TEAM

Jonathan Green ENVIRONMENTAL MANAGER

Before joining the project, I spent 12 years in consultancy followed by 11 years in road and infrastructure construction as the National Consents and Environmental Manager for one of New Zealand's largest construction firms.

I was drawn to the project for its construction and environmental challenges, along with the scale of the task of to build a road in this area. The environment is diverse and includes steep hill country, flat wetlands and coastal marine area. This variety makes it a very rewarding project to be part of, and certainly

provides plenty of environmental challenges to overcome as we progress the construction. It's great to be involved in something this big, and I'm looking forward to driving the road in years to come, knowing I was involved in its construction.

The biggest environmental challenge we are facing now is managing the earthworks areas and ensuring we control sediment generation and movement from these areas. Given the sheer scale of the project and amount of soil we need to shift, this is something we are constantly working on. We have a great team of experienced and passionate Environmental Advisors who support the ground staff and

engineers to manage the wider environmental effects of the project and ensure we comply with our conditions. Working with these guys, and the project team as a whole, is an absolute pleasure and one of the most rewarding aspects of the job.

Outside of work, I enjoy spending time with my wife and three sons, mountain biking, hiking and the occasional bit of motorsport, racing an old Fiat. I grew up in Warkworth and went to Warkworth Primary for two years followed by Mahurangi College. I'm not sure if that means I'm a local but my parents still live at Algies Bay and are encouraging me to move back with my family.

Snails on the move

Prior to work starting in the Ōkahu Inlet, adult mud snails (*Amphibola crenata*) living on the mudflat required relocation. Across several days the team, supported by ecologists from Tonkin + Taylor and representatives from Hōkai Nuku, collected over **30,000** snails which were then relocated away from the construction area.

Did you know?

Mud snails are native to New Zealand and live in large numbers on mudflats. When the tide goes out they eat twice their weight in mud each hour, digesting the detritus and bacteria and depositing the remains in a spaghetti-like trail – these snails are like 'gardeners' for the mudflats!



Snail collection underway



Winter works

The project's first earthworks season officially finished at the end of April and despite the challenging weather conditions this summer, we moved over one million cubic metres of rock and soil.

In May, the project team started winding down for winter. This means we are now working in a reduced capacity, however you will still see

machinery and people working across the site. Working through the winter allows us to continue with critical works in preparation for the 2018/2019 earthworks season, when we plan to move four million cubic metres of material.

Local board site visit

At the end of April, the project was pleased to host some of the Rodney Local Board members and staff. NX2 along with the NZ Transport Agency, took the group through a health and safety briefing, project overview presentation before visiting a few key areas of the project site.

Local Board Chair Beth Houlbrooke was impressed with the team's knowledge and progress: "Everyone who attended thoroughly enjoyed themselves and it was exciting to see the rapidly advancing project at such close quarters. We were extremely impressed with the expertise and knowledge of the project. Once again, our grateful thanks for the opportunity to view the motorway progress. It is very exciting."



Rodney Local Board members with staff and NX2 and NZ Transport Agency



Warkworth Primary School

A big thank you to Warkworth Primary School for having us back to do another presentation on the project. This term, the presentation focused on how we are building the road, special design features, and more rock blasting videos!

What's coming up?

NORTH

- Excavation work to begin in preparation for the 11 barrel culvert
- Preparation work for the "raft" or foundation layer of Woodcocks Road bridge

CENTRAL NORTH

- Continue excavating, rock blasting and crushing
- Continue laying CN8 triple barrel culvert
- Earthworks at CN13 to uncover rock

CENTRAL SOUTH

- Vermeer milling to continue extracting rock
- Construction of sediment retention ponds for new work areas
- Continue to 'muck out' gullies and install drainage in preparation to receive fill in the next earthworks season

SOUTH

- Continue ground improvement works, installation of wick drains
- Start of Te Arawhiti ki Pūhoi (Pūhoi viaduct)
- Completion of temporary causeway at Te Arawhiti ki Ōkahu

Project Timeline

✓ JANUARY 2017

Start of enabling works

✓ OCTOBER 2017

Start of bulk earthworks

✓ JANUARY 2018

Start of structures

NOVEMBER 2019

Start of pavement works

NOVEMBER 2020

Earthworks completed

OCTOBER 2020

Structures completed

SEPTEMBER 2021

Pavements completed

OCTOBER 2021

Works completed

LATE 2021

Motorway open to traffic

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