

CONSTRUCTION UPDATE

GROUND PREPARATION AND IMPROVEMENT WORKS

The NX2 Construction Team have been busy with ground preparation and improvement works in the northern section of the project.

While the north area is relatively flat, it certainly comes with its own challenges. This is because the ground in this section of the project is made up of materials such as alluvium (a combination of clay, sand and silt) as well as peat, making the ground softer and often water logged.

Before construction of the new motorway can begin, the engineers need to ensure there is a firm base to build on. There are several techniques to improve the soft ground, the most well-known

method is the installation of wick drains and the subsequent process of preload, for drainage and compaction. The wicks are inserted approximately 8 – 12 metres below ground by a machine called a ‘Wick Drain Rig’.

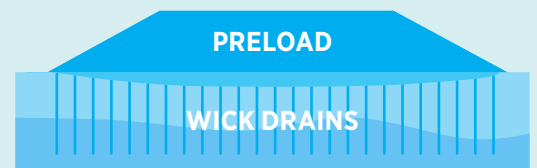
Senior Project Engineer Phil Wild, explains the process:

“We essentially stick a bunch of straws into the soft ground and cover these straws with a drainage blanket made of sand. We then compress the ground by piling a whole lot of clay on top and leave it there for about 6 months. As the materials compact, water runs up through the straws and drains out from the ground below”.

In some areas, there will be a second load of fill and a further 4-6 month wait period for ground water and pressure to be released. Once settlement is complete the permanent drainage and pavement construction can commence.

Did you know?

The project expects to install over 47,000 wicks in the northern section.



Wick drain rig inserting wicks (Wyllie Road)

Major milestone: construction of site access point 4 about to be completed

Over the past six months a huge effort has gone in to building a major site access point (known as SAP4) and a construction haul road, approximately 4km south of Warkworth off State Highway 1 (SH1), just south of the Honey Centre.

To build SAP4, there have been road widening works, installation of temporary and new guardrail barriers, and new road markings for the new road layout. Turning bays have also been built to allow construction vehicles to enter and exit the new site access point.

For safety reasons, new Rural Intersection Activated Warning signs (or RIAWS) will be in place to alert traffic to reduce speed through the area. These new electronic signs will show a 70 km/h reduced speed limit and will activate when SAP4 is in use by construction traffic.

NX2's CEO Ray Wilson says "Completion of SAP4 is a huge milestone for the project and a lot of effort has gone in to completing the works ahead of a busy earthworks season. Essential to this has been the traffic management along SH1, ensuring the travelling public and our construction team have been kept safe during construction. We thank everyone for their patience to date and we ask motorists to be aware of the new road layout and not to be distracted by the works."

The opening of SAP4 will give the project team better access into the area colloquially known as "tiger country" because of the challenging terrain, with steep peaks and deep gullies.



The central north section of the project is known as "tiger country".

What's that "green stuff"?

Driving along SH1 there are several areas covered with "green stuff" – which is not trees or grass! This "green stuff" is a combination of grass seed, fertiliser and a polymer. This combination has a dual purpose of protecting the cut slope and encouraging grass growth. It is applied to the area by a hose, a method commonly referred to as 'Hydroseeding'.

The polymer works as a skin, providing instant stabilisation to the slope and helping prevent erosion. The polymer also helps secure the grass seed and fertiliser, keeping it in place long enough for the grass to germinate.



Hydroseed applied to cut slopes

Ōkahu Viaduct gets underway

The structures team will start works on the southern abutment of the Ōkahu Viaduct in early January. First the access tracks and site access points will be built to allow safe entry and exit into the southernmost part of project area, near Johnstone's Hill Tunnels. Most of the works won't be visible to the public, so be sure to follow our progress via our website www.nx2group.com and on Facebook [f/Ara-Tuhono-Puhoi-to-Warkworth](https://www.facebook.com/Ara-Tuhono-Puhoi-to-Warkworth)

Did you know?

Did you know? The Ōkahu Inlet area is rich in cultural history and ecologically. It includes Ngā Pā o Te Hēmara Tauhia and the wider settlement areas up to Pūhoi. It also includes a previously unrecorded Pā site which was discovered during early site investigations of the project area. The team are working closely with iwi partners Hōkai Nuku, to ensure the significance of the area is preserved and every effort is taken to avoid adverse effects on tāonga (treasures).



Artist's impression of the Ōkahu Viaduct



Meet the Team

"Hola" from Alberto Torres Caballero, the project's Structures Manager who is responsible for the construction of the seven bridges and other smaller concrete works along the project. This summer Alberto and his team will be starting Ōkahu and Pūhoi viaduct structures in the south.

Alberto's home company is ACCIONA Infrastructure, the Spanish company that has partnered with Fletcher Construction to design and build the new motorway as a Construction Joint Venture.

Alberto, like his Spanish colleagues, brings extensive international experience having worked on major infrastructure projects in Spain and Canada, and is also familiar with the workings of a Public-Private Partnership (PPP).

Alberto has always enjoyed working with people from different cultures and the opportunity to experience new ways of working. He says, "On this project the effort that goes in to protecting the natural environment really reflects the kiwi 'clean and green' culture. This project is also very special with the strong connection to celebrate Māori heritage and traditions. I'm certain that the learnings from this project will remain in all of us for the rest of our days".

Alberto was born in Madrid, but grew up in a small village called Soto del Real. It's close to the start of the Guadarrama Tunnel, which is one of the longest tunnels in Spain and 9th in the world and was built by ACCIONA in 2008.

What's coming up?

IN THE SOUTH

(Johnstone's Hill Tunnels to Moir Hill):

- Site establishment for the southern abutment of the Ōkahu Viaduct
- Construction of site access points 11 and 12 and access tracks
- Completion of site access points 6 and 7 near Watson Road

IN THE CENTRAL SECTION

(Moir Hill to Kauri Eco Viaduct):

- Rock blasting and rock crushing continues in the Mahurangi forestry area
- Continuing to "muck out" deep gullies ahead of installation of gully drains
- Establishing sediment controls

IN THE NORTH

(Kauri Eco Viaduct to Northern Roundabout):

- Construction of a temporary bridge through the Kauri Eco Viaduct area
- On-going ground preparation works and trial embankments
- Start of first cuts near Wyllie Road

Out and about in the community

You may have seen the NX2 team recently at community events including the Kowhai Festival's Huge Day Out, the Kaipara Flats School Show Day and Warkworth Primary School's Walkathon.

The team have also recently been at Warkworth Primary School, teaching over 600 kids about the project and the native gecko that have been rescued from within the project area.



NX2's Halloween themed tent at the Kowhai Festival's Huge Day Out

Our team always has a great time at these events and really enjoy catching up with our project neighbours, the wider community and sharing information about the project.

You can expect to see us at the Warkworth A&P Lifestyle Show on 27 January 2018.



Handing out ice blocks at the Warkworth Primary School Walkathon



NX2 staff, project ecologists and three friendly gecko visited Warkworth Primary School.

Eyes on the road, don't get distracted!

There's a whole lot happening across the project, some of which can be seen from the roadside, but please don't be distracted by it. The best place to find out what's going on, is to check out our website www.nx2group.com or visit our project info centre at 45 Wylie Road. Opening hours are Tuesday 1pm - 4pm, Thursday 9am - 12pm or first Saturday of the month. Please note: the first Saturday for 2018 will be 3 February.

Stakeholder Satisfaction Survey

Our latest stakeholder satisfaction survey is now live!

The project is working hard to ensure our stakeholders and community are kept up-to-date with what's going on. Seeking feedback helps us to understand how we are progressing and if we can improve in any areas. The survey will be open until the 22 December 2017. All responses will go into the draw to win a \$50 Countdown voucher. To take part in the survey please follow this link: <https://www.surveymonkey.com/r/W8TF3FN>

Holiday shut-down period

After a busy and successful first year of the project, the project will take a short break over the Christmas/New Year period. Project works will stop on Friday 22 December and will start back up on Wednesday 3 January 2018.

Although works will be stopped, the project area remains a live construction site. Please do not enter any part of the project. For safety reasons, the only people allowed within the project, are inducted staff.

If you have a question or concern about the project, please contact us on 0508 P2WK INFO or info@nx2group.com.



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