

CONSTRUCTION UPDATE

New completion date mid-May 2022

It was announced on 1 July that the new opening date for the Ara Tūhono – Pūhoi to Warkworth motorway is now mid-May 2022.

The COVID-19 Alert Level 4 lockdown in April meant the project lost nearly five weeks of the earthmoving season. At the time of the shutdown, the earthmoving season was in full swing, with plans to move up to three million cubic metres of earth across the project during

the summer months. Not being able to finish that work has had a knock-on effect for the planned winter construction programme, and the resumption of work under Alert Level 3 with strict health and safety protocols has also affected our work programme.

We are pleased to advise we have worked closely with Waka Kotahi NZ Transport Agency agreeing a new programme that will allow us to get the project finished as quickly as possible, while maintaining high standards and keeping health and safety as our top priority.

We know people have been looking forward to using this spectacular new motorway and while any delay is disappointing, we're pleased with the progress that had been made prior to COVID-19.

As with all projects, the expected completion date is heavily dependent on good weather and no additional unexpected challenges, including further disruption as a result of COVID-19. All going well we look forward to opening the motorway to motorists in time for Queen's Birthday weekend in 2022.

Landscaping kicked off this winter

As other parts of the project tend to slow down over the winter months, our landscaping team will be working hard to make sure we plant as much as we can throughout the season.

Planting is carried out in winter when the ground is wet, and plants are largely dormant to let them acclimatise to their new environment before the summer. Soil water shortages in summer can be stressful to young plants so to give them the best chance of survival, planting is completed over the wetter months between May and September.

The team had hoped to plant over 500,000 plants this season (around 50% of the total planting for the project) but the preparation of planted areas was hampered by the COVID-19

lockdown. The final planting will be carried out in the winter 2021 season while the remainder of earthworks and finishing works move into the next earthworks season.

Once the planting works are completed, we will continue with maintenance of the planted areas to ensure that the plants are not overgrown by fast growing weeds. Within the first 12 months immediately following planting the planting areas could need up to six maintenance treatments to manage the weed growth. The maintenance effort will progressively tail off over the five years following planting until a canopy coverage is achieved and weeds are shaded out by the project's plantings.

Planting started at the end of June and we have up to 18 planters on site; the aim is to plant around 9000 plants per day depending on terrain and access.



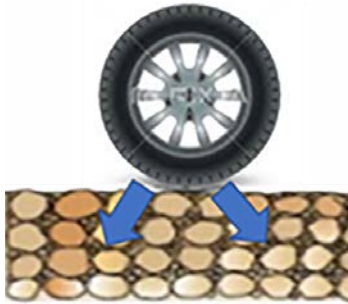
Taking shape – making the road surface

The new motorway is taking shape with the start of road surfaces works across the project. The final surface will be covered with a product called open grade porous asphalt (OGPA). Using OGPA is one of the best ways to reduce road noise because it is porous. It has a higher ratio of air voids, which helps water runoff and absorbs road noise (see diagram below).



Ordinary pavement

Air is trapped between the vehicle tyre and pavement causing the noise.



OGPA pavement

Air escapes into the voids created in the porous asphalt surface, thereby reducing some of the road noise. This is the surfacing to be applied on the Pūhoi to Warkworth new section of motorway.

OPGA road surface

On the project, road surface works have started in the north near the future Northern Connection (Pukerito) roundabout and will progressively continue south down the project alignment. The same approach has been adopted from the Johnstones Hill Tunnels in the south, which will work progressively north, eventually meeting up. The pavement works will slow down during the winter as a result of the wetter winter months, as care needs to be taken not to

deteriorate the underlying layers of the road (sub-strata).

To be as efficient as possible, the project is establishing its own asphalt plant. Work to construct this will continue through the winter, with the asphalt ready to deliver to the project in early October this year. We will be using the expertise from both construction joint venture partners Fletcher and ACCIONA so we can deliver a high-quality road surface to the travelling public.



Graders working on the sub-strata levels



Hard at work constructing the new road surfaces

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Planting facts

- Over one million native plants to be planted across the project.
- Planting is primarily made up of:
 - Amenity planting on the cuts and fills – to visually enhance the surrounding area and provide screening of the new motorway.
 - Wetland planting – providing an environmental function in the stormwater wetlands.
 - Ecological mitigation planting – to offset the native vegetation removed as part of the project works.
- The planting programme in some of the planted areas (predominantly the Ecological Mitigation Planting) is broken into two stages – as follows:
 - Stage 1 – a “nursery crop” of successional species are planted to create a shaded environment (Manuka, Kanuka, Karamu, Mapou). Once suitable Stage 1 coverage is achieved, we move into Stage 2 planting.
 - Stage 2 – the planting of specimen tree species amongst the Stage 1 successional species. The specimen tree species in Stage 2 plantings would naturally generate from the shaded areas beneath the Stage 1 planting in the natural environment (Kauri, Kahikatea, Puriri, Rewarewa, Tanekaha, Totara, Rimu, Taraire).
- Slow release fertiliser tablets are placed in the plant holes during the planting process to sustain the plant and encourage downward root growth as the juvenile plants adapt to their new environment.
- Most plants planted on the project will be from 0.5 litre and one litre pot sizes.
- Several larger specimen trees are to be planted on some of the batters to provide amenity and in some cases future visual screening of the motorway.
- The landscaping design for the project has been ongoing for several years and we worked closely with Waka Kotahi NZ Transport Agency, Auckland Council and Hōkai Nuku as the iwi advisor. The process also included community consultation through the Urban Landscape Design Sector Plans.

Project Information Centre reopens

We are pleased to advise our Project Information Centre is open to the public again. The Project Information Centre located at 45 Wyllie Road is open Monday to Friday during working hours and manned by the Stakeholder and Communications team at the following times:

- Tuesday: 9am – 12noon
- Thursday: 1pm – 4pm
- First Saturday of the month by appointment between 10am – 1pm, to book a time please contact the team on freephone 0508 P2WK INFO (0508 7295 4636) or email info@nx2group.com

Latest drone flyover

Check out the latest project flyover! Footage from June 2020.



Design feature – rock cut batters

Where there are steep rock cuts, the rock will be left exposed to showcase the geology as a key feature of the journey. This will create a minimalist and natural aesthetic as you travel along the new motorway. A fixed drapery wire mesh will be used on the rock face to catch any loose and falling debris. The mesh will allow the natural features of the rock to be visible with height of the mesh fixed at 4.7m above the carriageway to avoid any distractions for the road users.

Meet the team



Ross MacLean

Ross MacLean is the Section Manager for the concrete structures team. He joined the project in April 2019, after working on the Northern Corridor Improvement project in Albany, Scotland. Originally, Ross hailed from Hamilton, Scotland. He graduated in 2012 and worked as a Site Engineer on several large-scale projects throughout Scotland, as well as a six-month stint on the Falkland Islands in the South Atlantic. He then moved back to Scotland to a large cable stayed bridge project just outside Edinburgh where he progressed to Section Engineer. Once the project finished, he moved to New Zealand in January 2018.

The high-profile nature and large-scale viaducts drew Ross to seek an opportunity to work on the Pūhoi to Warkworth project. While similar to other projects he has worked on, this one has several unique challenges from the rigorous design specs to the varied and challenging locations of the structures. He says the best thing about working on the project is working within a diverse team to overcome challenges, and he is really looking forward to seeing the project through to completion.

Outside of work Ross lives with his partner and their two very spoiled cats. They both love to travel and explore new places. They are looking forward to a trip to Fiji soon, should travel restrictions lessen, where he will complete his open water scuba dive qualifications.

What's coming up

SOUTH

- Southern Connection Stage 2 – barrier installation and State Highway 1 southbound traffic transferring to the northbound lane as a contraflow on the southern side of Johnstones Hill Tunnels
- Arawhiti ki Ōkahu (Ōkahu Viaduct) – first concrete pour - mid-July
- Arawhiti ki Pūhoi (Pūhoi Viaduct) – Deck panels installation over Pūhoi Road (night works required) – early August
- Watson Road bridge beam installation – mid-July

NORTH

- 11 Barrel Culvert completion
- Te Arawhiti pua Ngahere (Kauri Eco Viaduct) – mobilisation works to start on southern side – late July
- State Highway 1 – widening works between Hudson Road and the Northern Connection (Pukerito) to commence – July
- Northern Connection (Pukerito) – enabling works underway, retaining wall and culvert work to be complete – end October
- Woodcocks Road Bridge – Super T beam lifts (night works and road closures required) – work commenced early July



In CN7 cut North



Arawhiti ki Pūhoi (Pūhoi Viaduct)



11 Barrel Culvert – North. This will be the biggest culvert to date in New Zealand consisting of 187 concrete pipes weighing 10 tonnes each. Each barrel will be 42m long and 2400mm in diameter



Mahurangi Stream bridge abutment



Wetland installation, next to 11 Barrel Culvert North



Te Tapuwae o Kahumatamomoe (Moir Hill Road bridge)



CN7 background North



Arawhiti ki Ōkahu (Ōkahu Viaduct)

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