



# Kaeo Bridge Upgrade



Waka Kotahi NZ Transport Agency is building a new two-lane bridge and roundabout at the intersection of State Highway 10 and Whangaroa Road that will improve safety and traffic flow for the local community and people traveling through the area.



The single-lane bridge just north of Kaeo township and the adjoining SH10/Whangaroa Road intersection are a safety concern for the local community, visitors and other people using the road.

The bridge is located on the Twin Coast Discovery Route, Northland's main tourist route, and provides access to visitor destinations such as Doubtless Bay, Karikari Peninsula and Cape Reinga.

During peak visitor season, the current bridge becomes a bottleneck, creating delays for everyone. Many of those driving across the bridge are not familiar with one-lane bridges and the need to give way can cause confusion.

# What will construction look like?

<b>Months 1-6</b>	<p>Crews 'preload' on the Mangonui side of the bridge. This involves building up several metres of gravel onto the site of the new road. The goal is to put as much pressure on the earth as 100 years' worth of vehicle traffic. This process will help stop the road from sinking into the soft ground once it's finished.</p> <p>In preparation, the paddock is stripped and a drilling rig is on site installing wick drains - vertical drains that help groundwater escape and dissipate as the soil consolidates.</p> <p>On the Kaeo side of the site a temporary road is created so that traffic can be shifted to the right, giving crews enough room to work on an abutment and retaining walls on the river side of the road and the roundabout.</p>
<b>Months 6-12</b>	<p>We monitor the preload to check it's doing its job and creating as much pressure as we need it to.</p> <p>We begin drilling piles - there are 16 to be drilled. They are 1.35m in diameter and vary between 20-43m in length.</p> <p>For each pile, a metal casing is driven into the ground and the material inside is drilled out. A reinforcing cage is then lowered in and concrete is poured inside it to form the pile. The eastern abutment is formed with eight piles and each pier has two.</p> <p>Drainage works are carried out around the site.</p> <p>As the land is soft, we need to build staging or pads that can hold the cranes we'll use to lift the bridge beams into place.</p>
<b>Months 12-18</b>	<p>We remove the preload and reuse it in other works on site.</p> <p>Pile drilling continues and we construct piers (the 'legs' of the bridge) and head stocks. Head stocks are the wider pieces that sit on top of the piers and hold the deck of the bridge in place.</p> <p>We continue working on the bridge abutments and start on the roundabout.</p>
<b>Months 18-24</b>	<p>At this stage we form the deck of the bridge using concrete beams.</p> <p>Each beam weighs around 45 tonnes each and five beams are used to create each bridge span. The bridge is made up of three 30m spans, with the eastern abutment containing an additional nine beams and spanning 18m.</p> <p>The beams are transported one-by-one from Auckland on a transporter truck with a jinker on the rear. The jinker is controlled separately from the main cab, which enables the long beams to navigate around corners (for example, up Brynderwyn Hill).</p> <p>Once each beam arrives, we use a crane to lift it directly onto the bridge head stocks.</p> <p>During this time, we also build the new part of State Highway 10, from the new bridge to the existing highway on the Mangonui side, and complete pavement works in other areas of the site.</p> <p>Lighting and signage are installed.</p>
<b>Months 24-32</b>	<p>We complete any final works, disestablish the old bridge and tidy up the site.</p> <p>The project is scheduled for completion in early 2024.</p>

Note: These timeframes are approximate only and are dependent on a number of factors, including supply of materials and weather.



Crews carry out earthworks and prepare the site at the Mangonui end



Drainage work is carried out as part of construction of the Taipa Bridge



A concrete beam is transported to Matakoho as part of bridge construction work in 2018

# Project features

The SH10 Kaeo Bridge Upgrade will feature a new two-lane bridge across the Kaeo River and a roundabout to improve traffic flow through this section of road.

The new bridge design will have minimal environmental impact on the area as the route is over land that is already cleared, and it crosses the Kaeo River without changing the riverbed, banks or flow.

By making it easier to move through the intersection and over the bridge, the project will:

- **improve road safety**
- **eliminate peak season vehicle queuing**
- **improve the experience of visitors, freight traffic and other people travelling the Twin Coast Discovery Route**
- **support Northland's tourism industry and broader economic development.**



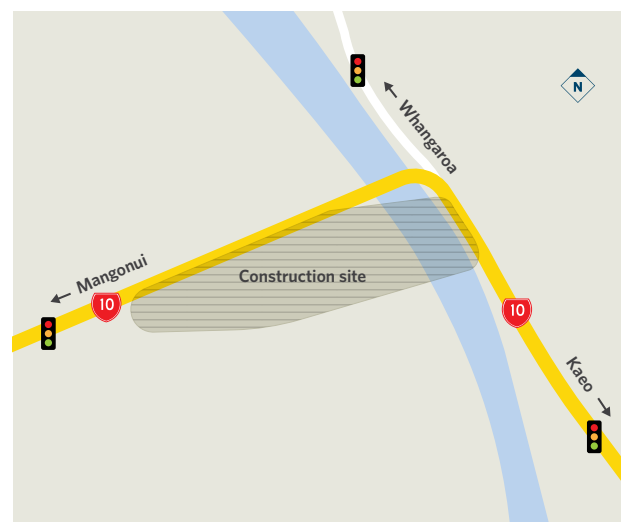
## Keeping you moving

Much of our construction work can be done off the state highway.

However, at each end of the site crews will need room to work. At the Kaeo end, there is little space between the road and the river, and a platform is required to hold heavy machinery. At the Mangonui end, we need space to preload and build the new piece of state highway where it will join the existing road.

**This means there will be a single lane through site, with traffic controlled by traffic lights, for the duration of construction.**

From early 2022 the traffic lights will be on sensors, rather than timers, meaning wait times will be as short as possible.



If you'd like to know more, phone us on **0800 44 44 49** or email [northlandproject@nzta.govt.nz](mailto:northlandproject@nzta.govt.nz)

Keep up to date with progress and sign up to receive project updates at [www.nzta.govt.nz/kaeo-bridge](http://www.nzta.govt.nz/kaeo-bridge)