

# Hamilton Section

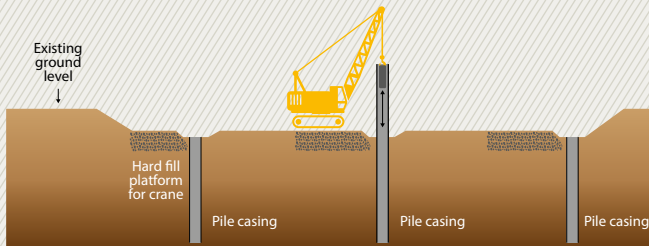
## How do you build a bridge 'top down'?

When we think about bridges, most of us think about bridges being built from the ground up.

However, many of the bridges to be built on the Hamilton Section of the Waikato Expressway will be built 'top down'. This means they will be built 'on the ground' and then the expressway route will be excavated beneath. This minimises the effects on traffic, local residents and local communities.

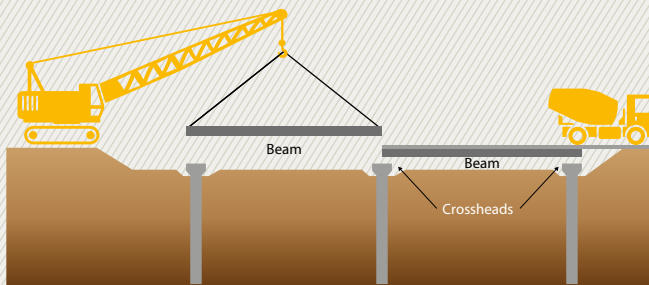
By the end of 2017, 14 of the 16 bridges on this project will be under construction or completed along the project.

### Top down bridge construction process



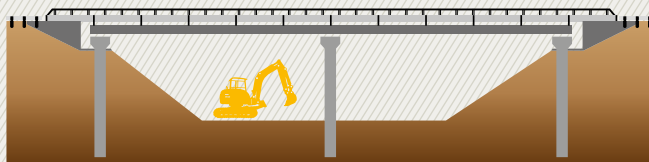
#### Stage 1: PILING

Pile casings are driven up to 40m into the ground to support the weight of the bridge. A weight (the hammer) is suspended by a crane and dropped inside each pile casing. It lands on a foot installed at the bottom of the pile to drive the pile casing into the ground. Once the pile reaches its target depth, reinforced steel cages are dropped into the casings, then filled with concrete.



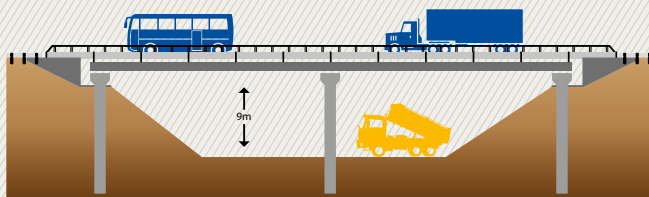
#### Stage 2: BEAMS

Concrete crossheads are poured on top of each row of piles. Prefabricated beams are then lowered by a crane on to the crossheads. A concrete deck is poured on top of the beams.



#### Stage 3: EXCAVATION

Bridge guardrails are installed and a bitumen surface laid on the bridge for traffic. The expressway is excavated below the bridge.



#### Stage 4: PAVEMENT

The bridge is opened to local road traffic. The expressway pavement is laid, compacted, sealed, and line-marked.



#### Birds breed on site...

Birds discover a perfect wetland habitat in the construction zone...

Page 2



#### Busy site in 2017

Our big construction preview map shows how busy the site will be this year...

Page 3

# Pied stilts raised among diggers and dumptrucks

## Protecting native wildlife populations – and helping them thrive – is core business for the project team.

In November 2016, the project earthworks team accidentally created an ideal 'wetland' habitat for a colony of pied stilts. Water was present in a series of ponds on the site of the new Ruakura Interchange. Before the team realised what had happened, a colony of pied stilts had begun nesting on islands in the ponds.

Sand embankments were being built on both sides of the nesting site, but the birds paid no attention to the dumptrucks and motorscrapers rumbling past them on all sides.

Up to seven adults were seen in the area at any one time. They made two nests and laid seven eggs. Pied stilts (poaka) are considered 'at risk' because of declining numbers and habitat.

The whole project team adopted the pied stilts, and kept in touch with the chicks' progress through regular photo and video updates.

While the site seemed a crazy location for a nesting site, the construction traffic may actually have protected the birds from predators such as cats and harrier hawks.

The project team did a great job keeping the project running while protecting the nesting site. Earthworks managers tweaked their construction programme to avoid the nesting site while the eggs hatched and the chicks were raised. Dumptruck and motorscraper operators were briefed to look out for the black and white birds. Meanwhile, the project's environmental staff monitored the nests and liaised with the Department of Conservation and the Waikato Regional Council.

The chicks hatched in December but the ponds began drying up as the project prepared to shut down over Christmas-New Year.

When environmental staff checked the site in January prior to construction recommencing, the chicks and adults had moved away.



### Lizards released into protected area

In January, two more native copper skinks were released into a pest-protected home in the Mangaonua Gully east of Hamilton. A total of five have now been released into the enclosure so far after extensive searching and spotlighting in areas earmarked for construction.

Project staff have found hundreds of introduced plague or rainbow skinks on the expressway route, but very few native skinks. The copper skink has intense competition for habitat and food sources from the Australian skink which is a more prolific breeder. The plague skink lays large quantities of eggs, whereas the copper skink gives birth to a small number of live young.

The gully enclosure for the copper skinks was designed and fenced to provide an ideal home, then cleared of predators before the first two skinks were introduced late in 2016. Pest control inside and outside the enclosure continues. Pest control efforts will also be carried out throughout 20 hectares of gully habitat for 10 years after the Project has been completed. The protected habitat can support a population of up to 100 skinks.

Outside the enclosure, project staff will also restore large areas of native vegetation in parts of the Mangaonua Gully currently filled with scrub and weeds. Over the whole project, 10.2 hectares of gully habitat will be restored. Over the whole project, 650,000 plantings are planned – mostly native species.



A copper skink is released into the pest-free lizard enclosure.



The pied stilts weren't bothered by the big machines rumbling by their nests.



A pied stilt chick is already feeding in the pond.

# Project construction in 2017



## Hamilton Section

Waikato Expressway

### Construction in 2017

- - - - - HCC/WDC boundary
- - - - - Expressway route
- Traffic signals operating
- Bridge construction site



## Dampening down dust

A fleet of water tankers is working constantly to dampen down tracks and work areas to prevent dust being blown off the project site.

Water bores and storage ponds are progressively being developed along the project length as earthworks commence in new areas.

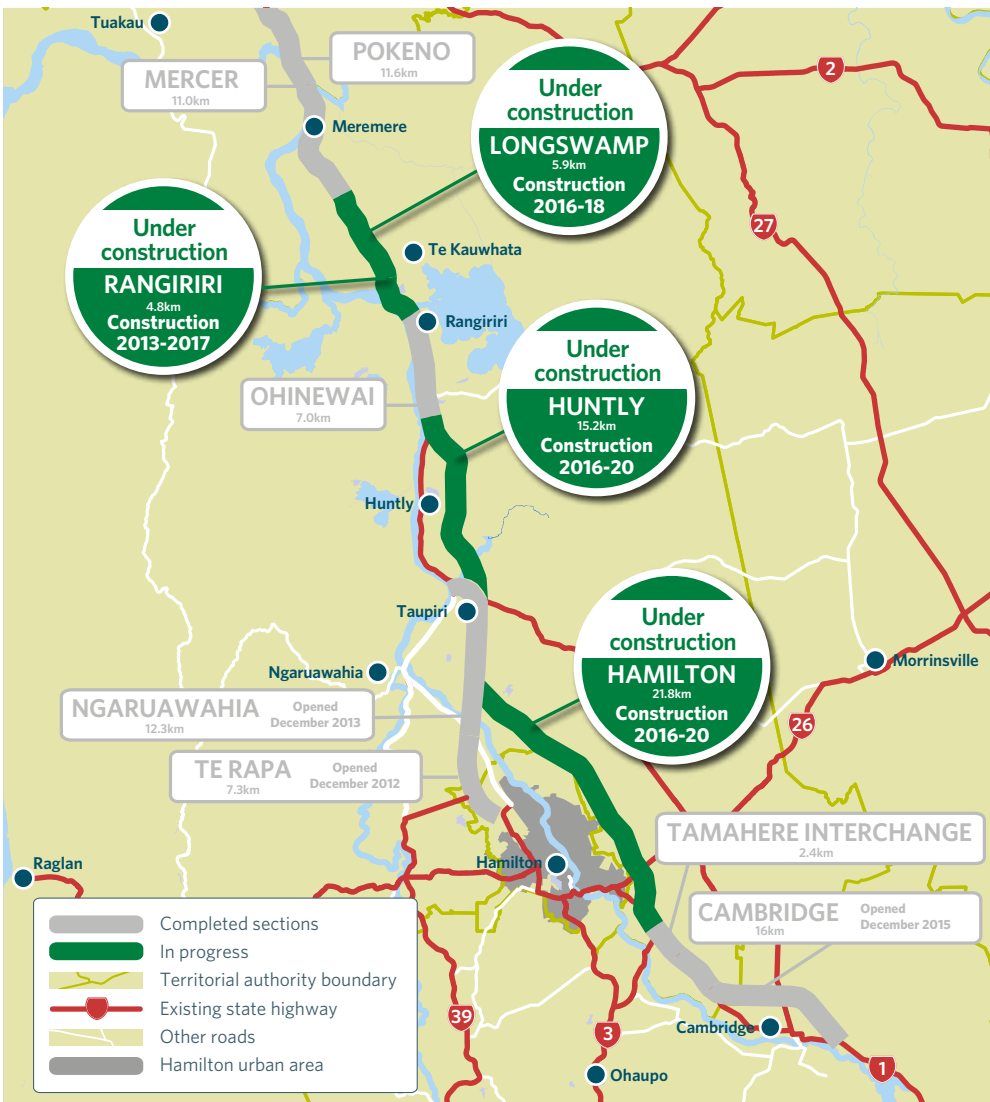
A new bore and storage pond north of Kay Road is now supplying water to a fleet of off-road tankers dampening down the Resolution Drive tracks and work areas. With construction vehicles now crossing Osborne Road in Horsham Downs, tankers from different areas in the north are now able to travel freely along the northern 7km of the project site to tackle the driest areas.

Where possible, tankers are spraying work areas prior to earthmoving vehicles starting work each day.



A water tanker in action.

## Waikato Expressway overview



### Project Open Day

We're holding a Project Open Day from 10.00am-3.00pm on Saturday 1 April 2017 at the Project Office, 164 Percival Road, Ruakura. Save the date. We'll have lots to see and plenty to do for the whole family.



### Visitor Centre opens on Saturday

We're opening our Visitor Centre on Saturday 5 March, from 10.00am-1.00pm. We will continue to open on the first Saturday each month while we have sufficient visitor numbers.



### Any questions?



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**Dana McDonald**

Hamilton Section Relationship Manager  
NZ Transport Agency  
Telephone: 0800 322 044