



OCTOBER 2009 ◦

SH18 HOBSONVILLE DEVIATION & SH16 BRIGHAM CREEK EXTENSION

Hobsonville Road Bridge: The start of the big dig

As you drive over the crest of the Northwestern Motorway at Royal Road towards Westgate, you're greeted by a sea of earthworks and cones sitting in what looks to be the middle of the road. You may be wondering - what is it all for?

The hive of activity at the end of the Northwestern is in fact progress on the SH18 Hobsonville Deviation project. When complete in 2012, it will deliver Waitakere's commuters a brand new link from the end of the Northwestern Motorway (SH16) at Massey North to North Shore City to increase capacity, reduce congestion on local roads and improve traffic flow. An extension of the Northwestern to Brigham Creek Road will add another three kilometres to the motorway.

It's also the start of a big dig to excavate 200,000 cubic metres of earth from underneath the Hobsonville Road Bridge to allow the new extension to pass underneath.

The HEB Construction team have already dug four metres down in the centre of the signalised roundabout to sink 18 bridge piles in place and lower 24 beams on top to form the bridge. They'll now dig down another four metres this summer as soon as the variable weather clears. When complete, motorists will travel on the motorway eight metres below the Hobsonville Road Bridge.

Substantial walls of earth will support the bridge piers. These eight metre high walls will be held in place by 'soil nails'. Frequently used in motorway construction the technique was first used in France in 1972. A hole is drilled into the slope at a downwards incline and a rod of reinforcing steel inserted. When filled with concrete it creates support and helps prevent erosion of the surrounding environment. More than 1000 of these 'soil nails' will be used on the Hobsonville Road Bridge.

While the team completes the excavation, motorists will use the on and off-ramps of the final interchange that are currently under construction. The earth from underneath the bridge will be transported and reused elsewhere on site.

The team is looking forward to the start of the earthworks season that runs from October to April and a chance to accelerate progress after working through Auckland's wet winter.

"It has been a wetter winter than usual and we need the ground to be quite dry for earthworks, so although we've had some great sunny winter days, we have to wait for the ground to dry out before continuing," says David Loe, Project Manager for HEB Construction.

"During the winter months we've been focusing on constructing the bridge which is less weather dependent. The overnight closures have allowed us to lift the bridge beams into place at Hobsonville Road with a large 150 tonne crane," he says.



Work continues inside the roundabout at Hobsonville Road



To North Shore

Upper Harbour Bridge

Squadron Drive



Construction of the roundabouts is underway along Brigham Creek Road



Trig Road Bridge will carry local traffic over the motorway when it is completed



The new Squadron Drive Interchange under construction near Monterey Park

Brigham Creek Road

Sinton Rd

Clarks Lane footbridge

To Helensville

BRIGHAM CREEK EXTENSION

Trig Road

HOBSONVILLE DEVIATION



Westpark Marina

Existing State Highway

New Motorway



Westgate



To Auckland City



Watery wildlife on the move

Alongside the bridge building that continued throughout winter, the project landscaping team have been busy creating new watercourses around construction and moving some of the local wildlife to safer areas.



Large eel ready to be released into a new environment

Many seasonal and permanent streams run through the motorway construction area. To keep these flowing, 15 kilometres of large concrete pipes have been installed to divert the streams beneath the road. Some of these pre-cast concrete pipes are 2.4 metres in diameter.

Before the new pipes were installed, local iwi Ngati Whatua Nga Rima o Kaipara helped the team to relocate fish and eels. They were carefully netted and released into various watercourses along

the project so as to not overload the ecosystem.

During this time koi carp were removed from the waterways. Koi carp are a local pest fish that skim the bottom of streams and degrade the water quality for other fish.

To help the local wildlife once they move back into the area, fish ladders have been installed in the pipes. Fish ladders are a series of small steps artificially created that allow fish to rest in the water as they swim upstream.

The team have also been busy planting out the local stream banks to give plants time to grow before summer. Planting the stream banks provides shade across the water that keeps the water temperature down for fish. The plants assist with preventing erosion and filtering run-off before it reaches the stream.

The plants used are from the existing ecosystem and provide food and flowers for local birds and insects. These include sedges, rautahi (cutti grass), karamu (with red fruit), mingimingi (white flowers), toetoe, mahoe, kowhai and flax.

Meet the team –

Rachel Kirk, Project Manager, NZ Transport Agency

Rachel Kirk is the overall project manager for the NZ Transport Agency. Originally from the UK, Rachel has been living in New Zealand for nearly four years. Her last project for NZTA was the SH18 Greenhithe Deviation completed in December 2007, to help relieve congestion along Upper Harbour Drive.



Rachel is managing construction of the last section of the SH18 motorway and the extension of SH16 to Brigham Creek Road. She returns to the project after time off on maternity leave to give birth to her first

child. After graduating with a Civil Engineering degree in 1994 from Durham University in England, Rachel met her Kiwi husband in London and he persuaded her to move back here.

"I love the lifestyle here, especially the outdoors life we can enjoy in Auckland given the coastal location, proximity to bush like the Waitakeres

to enjoy great (buggy-friendly) walks and with a generally good climate," Rachel says.

"Civil engineering is about designing and delivering improvements to a community and city, meeting people's needs and taking into account specific concerns. I enjoy the challenge of being part of a team delivering the new motorway and my role as project manager includes ensuring we work to budget and programme. The project will significantly improve transport links for Waitakere and the wider Auckland region and we are working hard to ensure we leave a legacy we can all be proud of."

You can contact Rachel at the NZTA on 09 368 2000 or rachel.kirk@nzta.govt.nz

Upcoming milestones

- Trig Road Bridge – opening (early November)
- Hobsonville Road Bridge – dismantling roundabout, changing road layout and putting traffic on new bridge (early December)
- Squadron Drive Interchange – temporary diversion of SH18 at Squadron Drive (early December)
- Brigham Creek Road Interchange with SH18 – diverting Brigham Creek Road to new motorway route (mid January 2010)

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www.nzta.govt.nz/upperharbourmotorway